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ARIZONA MEDICINE
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Original Articles

CUTANEOUS NEOPLASMS*

By Donald J. McNairy, M.D.
Phoenix, Arizona

THE selection of the subject "Cutaneous Neoplasms" was prompted by the personal observation that patients often seek a dermatologist regarding a new growth following lack of interest or indifference displayed by their examining doctor.

It has frequently been demonstrated that inconspicuous cutaneous changes, because they are plainly visible, are as much a source of concern to the individual as the more prominent medical or surgical indications may be to the physician. This attitude of concern may be explained, in part, by the ever increasing dissemination of medical information through newsprint, radio and television, thus stimulating apprehension, cancer-consciousness, and even cancerphobia among many.

The importance of early recognition and differentiation of the various cutaneous tumors should not be minimized. Statistics tell us that 5,000 United States citizens die yearly of skin cancer. Errors in early diagnosis, inadequate attention to small cutaneous lesions when overshadowed by other complaints, and improper skill and judgment in evaluation and management undoubtedly are largely responsible for this total. It is my belief that with our present knowledge and methods of therapy, many of these deaths should be preventable.

The following classification is obviously not detailed nor complete. Instead, it is presented for the average practitioner, in the practical sense, to facilitate clinical differentiation between those common new growths of purely cosmetic consideration and those possibly, potentially, or frankly malignant. The accompanying discussion will be, for the same reason, brief but pointed, with little or no reference to other than the most commonly encountered tumors or neoplasms.

I. Benign Neoplasms
  A. Epidermal
    1. Nevus (common mole)
    2. Verruca Senile (seborrheic keratosis)
  B. Dermal
    1. Fibroma—dermatofibroma; cutaneous tag
    2. Lipoma
    3. Keloid (cicatrix)
  C. Vascular (angioma)
    1. Hemangioma—capillary (Port wine); simplex (strawberry); cavernous
    2. Lymphangioma
    3. Pyogenic Granuloma

* Presented with illustrations and certain modifications at the Sixty-Sixth Annual Meeting of the Arizona State Medical Association at Yuma, Arizona, April 12, 1957.

II. Precancerous Neoplasms
   A. Senile Keratosis—cutaneous horn
   B. Leukoplakia
   C. Bowen's Dermatosis
   D. Paget's disease of the nipple
   E. Arsenical Keratosis

III. Malignant Neoplasms
   A. Basal Cell
   B. Squamous Cell
   C. Melanoma

In discussing benign epidermal neoplasms, first, briefly, let us consider nevi. These tumors, common to all, may develop during infancy and continue to form throughout early and mid adult life. The average adult has from a few to several hundred such lesions. They may be flat, papular or pedunculated, and vary in color from normal flesh pink to deep brownish black. Although the dreaded malignant melanoma arises chiefly from these benign structures, the incidence is extremely rare, perhaps one in several million. Which should be removed? Probably the best brief criterion to follow is that any nevus subject to repeated trauma or irritation is safest eliminated. Also, the junctional nevus undergoing active changes in adult life should be thoroughly removed. Although "junctional" is a histopathological term, this type of nevus can frequently be clinically recognized as a flat or slightly elevated new growth showing evidence of deep or irregular pigmentation change which frequently extends beyond the actual tumor confines to produce an irregular, fuzzy border. In addition, it is well to remember that the greatest percentage of melanomas are found on the extremities, genital area, head, neck and trunk in that order.

Seborrheic keratoses or seborrheic verrucae are the most common true benign neoplasms to appear in mid or later adult life. They occur mainly on the trunk, particularly the shoulders, and on the scalp and face. Ordinarily, they develop as small yellowish or brownish raised lesions, covered by a thin greasy scale, sharply marginated, suggesting a "stuck on" appearance. Multiple lesions are the rule. Some may enlarge to considerable size or become deeply pigmented, but unless secondarily irritated, exhibit no tendency toward inflammatory reaction around the lesion.

Benign dermal neoplasms, while commonly seen, seldom are diagnostic or therapeutic problems. Soft fibromas, or cutaneous tags, are frequently found on the neck and body folds of adults. Reassurance is needed, and those cosmetically objectionable or subjuct to irritation may be removed. Hard fibromas represent fixed, shot-like hyperpigmented nodules, usually on the extremities, particularly the lower leg. Removal is optional, but if decided upon, should be by excision, thus avoiding unsightly scars or delayed healing. Lipomas seldom prove diagnostic dilemmas, and reassurance is usually sufficient. The keloid results from an unusual tendency to produce hyperplastic scar tissue. It is a frequent source of discomfort and concern to those in whom it occurs. Opportunity to effect improvement, usually by irradiation, is in direct proportion to the age of the neoplasm.

The vascular group of new growths, appearing chiefly in infancy, are common to all. While a "wait and see attitude" is frequently justified, remember that every parent wishes a perfect child, and a rapidly enlarging tumor is a considerable source of concern. Radical therapy is seldom indicated. Early consideration of refrigerant, electrosurgical, or minimal irradiation measures may eliminate anxiety, stop tumor growth, and reduce residual scar formation as well. The pyogenic granuloma is a rapidly growing vascular tumor which frequently appears following a minor irritation or injury with secondary infection intervening. The lesion may be crusted, bleed freely, has a special predilection for scalp, lips or fingers of young individuals, and is easily treated by electrodesiccation or cautery.

Precancerous Neoplasms

This tumor group deserves clinical recognition since it is classified as pre-malignant, in that 15 to 25 percent eventually terminate in skin cancer. It is particularly in this group that early diagnosis, avoidance of irritation, and appropriate "prophylactic" removal therapy can reduce the overall incidence of cutaneous malignancy.

Senile keratoses are lesions produced by a peculiar hyperplastic epithelial change of the skin or muco-cutaneous junction. They are confined almost exclusively to the exposed body surfaces of elderly persons, or at an earlier age in individuals of English, Irish or Scotch descent, with a tendency to freckle instead of tan. Such persons are said to develop senile cutaneous changes

prematurely. If they choose an occupation which exposes the skin to the elements—sun, wind and rain, the cutaneous degenerative changes become more pronounced. In contrast to prevailing belief, senile keratoses are often inconspicuous. Excepting those occurring on the dorsum of the hands or the vermilion border of the lower lip where hyperkeratosis may be more pronounced, they frequently represent flat plaques, scarcely raised above the skin level. They may be erythematous, slightly atrophic, with adherent yellowish scale and irregular indefinite margins. Often palpation is required to demonstrate their presence.

The cutaneous horn is a special type of senile keratosis in which keratin remains adherent, producing a narrow, elongated cylindrical excrescence. Commonly located on the ear or about the face, the erythematous base is not infrequently the development site of early anaplastic squamous cell carcinoma.

Leukoplakia is the mucous membrane analogue of senile keratosis. It is characterized by an irregular white or gray plaque, occurring on the lip or buccal surface of the oral cavity, or on the genital mucosa. In the absence of thickening or ulceration, observation stressing the avoidance of possible sources of irritation is in order. Infiltrative changes, fissuring or ulceration always demand immediate removal.

Briefly mentioning the more rare precancerous entities, Bowen's dermatosis on the trunk may resemble psoriasis or nondescript scaling erythematous plaques, frequently multiple. The diagnosis is miscroscopic with "in situ" changes within the epidermal layers assuming early malignant features. These lesions may remain quiescent for years before invasive malignancy develops. Any persistant eczematoid eruption of the breast, areola or nipple area should be watched, since Paget's disease of the skin may be a possibility. If not responding to the usual therapy, or with infiltration developing, biopsy study is indicated, since associated proliferation of the lacteal ducts, and later, carcinoma of the breast may appear. Fortunately, the administration of trivalent arsenicals in the form of Fowler's solution is no longer prevalent, since this substance has been responsible for pigmentary cutaneous changes, punctate keratoses of the palms and soles, and an increase in tendency toward cutaneous malignant degeneration of these lesions later in life.

Malignant Neoplasms

Basal cell cancers develop from the basal cell layer of the epidermis. They are characterized by slow evolution, persistant tendency toward local recurrence after operative removal, and progressive invasion, even to involve cartilage and bone. They may extend by way of irregular pseudopods, "iceberg fashion," below the epidermis. They occur chiefly on the face, especially about the nose, forehead, eyelids, temples and upper lip. The early lesion is usually a discrete pinhead to pea size, waxy or pearly nodule which extends irregularly to form a plaque. Frequently a scale or crust appears, the removal of which causes bleeding. Then, with a series of crustings and removals, ulceration forms.

The squamous cell cancer originates from the prickle cell layer of the skin, frequently from a senile keratosis. The surface may be dry and wartlike, superimposed upon a dull red base. The lesion grows rapidly. The margins are quite raised, and the center becomes a level plateau, the surface being either ulcerated, flat or covered with cauliflower-like vegetations. Areas of predilection are the lower lip, genitalia, extremities and scalp. Extension is chiefly into adjacent tissue, but may go to the regional lymph nodes.

Squamous cell lesions are more numerous in male subjects and have a tendency to appear a little earlier in life than the basal cell variety.

Summary

It is acknowledged that your patients, the general public, are becoming more informed, cancer-conscious, and more concerned over cutaneous neoplasms.

The brief classification and the accompanying discussion should be of assistance in early clinical recognition of these new growths.

Earlier clinical differentiation, better judgment, and improved therapy techniques should substantially reduce the present skin cancer mortality rates.

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SURGICAL TREATMENT OF OTOSCLEROSIS

By D. W. Frerichs, M.D.
Phoenix, Arizona

DURING the past nineteen years a notable advancement has been made in otological surgery pertaining to the treatment of deafness. These surgical efforts have been directed toward a pathological condition known as otosclerosis which produces a bilateral conductive deafness. Medical journals, lay magazines and newspapers have carried numerous and often dramatic articles relative to this subject, many of which are poorly documented and give a misleading impression of the benefits derived from surgical treatment.

It appears that a discussion of the current status of the surgical treatment of otosclerosis might be of value to the general physician and to specialists remote from otolarnyngology. Often a physician, regardless of his field of endeavor, is confronted with a patient suffering from a hearing loss, and it behooves one to be familiar enough with current progress in this field to advise or direct the patient. In an area with a scattered population, familiarity with a few otological techniques in diagnosis may save a patient considerable time and money. The physician may sometimes prevent a great disappointment to a patient with nerve deafness by gently subduing the patient's hopes which have been whipped up by a current magazine article, or he may direct a patient who is unfamiliar with modern development in ear surgery to a new life with normal hearing.

Pathology

Otosclerosis is a pathological osseous abnormality which occurs in the petrous bone in possibly 10 per cent of the adult population[1]. However, symptoms are not manifested unless the osseous changes encroach on the footplate of the stapes[2], penetrate the cochlea, or obstruct the round window of the vestibule. The common area involved that produces symptoms is the anterior margin of the footplate of the stapes. Fixation of this ossicle prevents a normal tympanic membrane from transmitting sound waves to the cochlea. The ankylosis of the stapedial footplate may be compared with the fusion of a joint by rheumatoid arthritis. The histopathology is different, but the functional loss is the same. The rocking piston action of the stapes is prevented, and sound cannot reach the inner ear except by bone conduction. Complete uncomplicated fixation of the stapes usually results in a hearing loss of 40 to 50 decibels. This is considerably below the level needed to comprehend normal conversational voice.

History

The patient with otosclerosis usually notices the hearing impairment between the ages of 20 and 30 years. A family history of a similar type of deafness in a parent or near relative is often elicited. The person with otosclerosis may or may not have had the usual number of childhood ear infections. The deafness is insidious in onset and may develop rapidly in a few years or slowly produce symptoms over a decade. A constant tinnitus is often present. Vertigo is usually absent. The disease shows a predominance in females. Pregnancy may accelerate the symptoms. A patient will often state that hearing seems better in a noisy environment, as when riding a train or an airplane. Many patients are wearing hearing aids at the time of their examination, and although they may profess dissatisfaction with the instrument, they will admit that hearing is improved by sound amplification.

Examination

The patient with otosclerosis is soft-spoken, as his bone conduction is normal and he hears his own voice clearly. The ear drums have a normal appearance except for advanced cases which may reveal an odd reddish line in the posterior-superior quadrant. This phenomenon is due to increased vascularity of the otosclerotic bone behind the drum, and is known as Schwartze's sign. If a Siegal otoscope is inserted in the ear canal, alternate positive and negative pressure reveals normal mobility of the ear drum. The eustachian tubes are patent when insufflated.

Placing a tuning fork with a frequency of 512 d.v. or even 1024 d.v. alternately in front of the auditory meatus and then on the mastoid process reveals that bone conduction is louder than air conduction (negative Rinne test). A 256 or 512 tuning fork placed on the vertex of the skull or on the incisor teeth reveals equal referral of the sound to both ears or referral to the ear with the

greatest hearing loss (Weber test). If the intensity of the examiner's voice is raised sufficiently, the patient should comprehend almost all spoken words. This latter test often differentiates from nerve deafness in which increased loudness does not improve understanding of spoken words to the degree experienced by otosclerotics who usually have normal nerve function. Audiometric examination reveals a characteristic flat line for air conduction with near-normal bone conduction. X-rays of the mastoids are usually negative. A sclerotic mastoid does not contraindicate surgery.

Other tests may be necessary for selection of surgical candidates. However, these may be reserved for the otologist, as they require special equipment and training in interpretation.

Treatment

I. Fenestration Operation.

No medical treatment has ever proved of value in otosclerosis. Prior to surgical developments, recommendation of the hearing aid was the only beneficial advice a physician could offer.

In 1938, Dr. Julius Lempert[2] developed the first practical approach to the surgical correction of otosclerosis. The fenestration operation had previously been performed by others, but the surgical method devised by Lempert resulted in a one-stage operation that brought about a marked increase in successful results as compared with previous work. This operation is basically a by-pass procedure, and sound is conducted into the inner ear by creating a new window in the bony labyrinth.

Numerous refinements have been made in technique [4-5-6-7], and the percentage of permanently successful cases expected from surgery has reached eighty per cent. Almost all of the properly selected cases will obtain satisfactory improvement, but within a year a small number have closure of the fenestra by bony regrowth. The number of closures has been greatly reduced by improvements in the method of developing the fenestra. Antibiotics and vestibular sedatives have resulted in minimal post-operative complications.

Case Report:

The audiometric examination of one of my cases shows the pre- and post-operative hearing in a typical otosclerotic patient on whom I operated in January, 1956. The improvement in hearing was satisfactory and has been maintained to date.

In fenestration surgery, the patient's hearing cannot be returned to absolute normal as the mechanical advantage of the ossicular chain is lost. The patient obtains serviceable hearing for normal conversational voice. A hearing aid is not needed. However, on audiometric testing a loss of 20 to 25 decibels is noted.

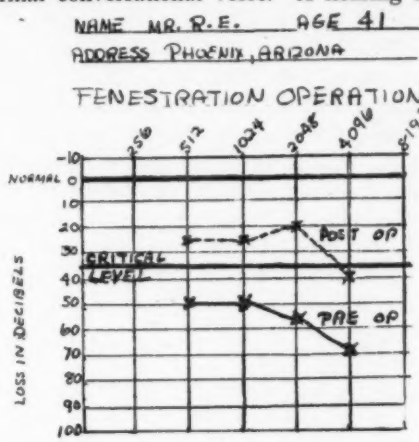

FIG. 1

Forty-one year old male. Fenestration operation performed on left ear, January, 1956. Note post-operative hearing gain as compared with pre-operative level. No hearing aid is needed, as hearing in speech range is above critical level of 35 decibels.

II. Stapes Mobilization

In 1953, Dr. Samuel Rosen[8] reported successful attempts at mobilization of the ankylosed stapes in otosclerosis. Dr. Rosen utilized an approach to the middle ear involving the development of a tympano-meatal flap. This provided a direct approach to the stapes, and with the use of magnifications and special instruments, successful lysis of the otosclerosic fixation was accomplished. With the refinements introduced by Rosen in approaching the stapes via the external ear canal, the operation has become a practical procedure.

Mobilization is attempted first by transincudal methods, then via the capitulum, or the footplate when necessary. Goodhill[9], House, Shambaugh, and Fowler[10] have all reported methods which facilitate restoration of stapedial motion. The success of surgery varies slightly with the operation, but approximately 60 per cent of the patients[11] are receiving adequate gains in hearing.

The stapes mobilization procedure requires only a few days' hospitalization. It is a short operation and is performed under local anesthesia. This allows checking the hearing to confirm successful mobilization prior to closure of the tympano-meatal flap. The patient is restored to complete activity within three days and the ear is

healed in less than two weeks. Complications are minimal. The operation often restores the patient to his maximum cochlear reserve as the ossicular chain is left intact and continues to function normally. The hearing in many cases reaches the previous bone conduction hearing level.

Considering the mechanism of hearing loss due to otosclerosis, one would expect a high percentage of recurrence of fixation of the stapes after successful surgery. This is apparently not the case, for reasons unexplained, and less than 2 per cent of the patients with adequate hearing gains suffer a subsequent return to pre-operative levels. However, as the procedure has been performed for only four years, the long-term results may show a greater number of post-operative fixation of the stapes.

Case Report:

The pre- and post-operative audiometric examination on a patient with clinical otosclerosis is recorded below (Fig. 2). I performed this surgery in June, 1957, and the hearing gain has been maintained to date. The patient left the hospital the same day surgery was performed. The following day she was able to carry on with her usual household duties. The ear was completely healed in 10 days.

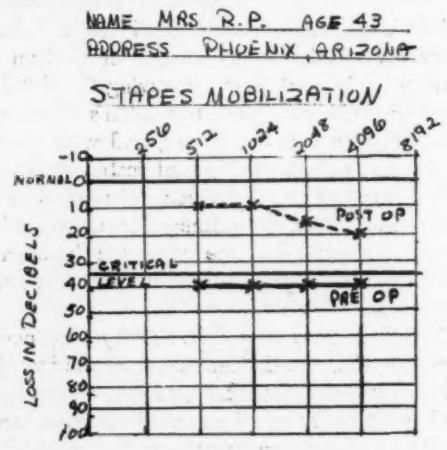

FIG. 2

Forty-three year old female. Stapes mobilization performed on left ear in June, 1957. Note post-operative hearing gain as compared with pre-operative level. A hearing aid is no longer needed as hearing is well above the critical level for conversational voice.

Discussion

The fenestration operation has a higher incidence of success than the stapes mobilization procedure, but it is becoming the practice in most medical centers to perform the stapes mobilization operation initially. The expense to the patient, the period of hospitalization, and the post-operative care is much less formidable with stapes mobilization than with fenestration surgery. The procedure allows direct visual confirmation of the diagnosis, and if the stapes cannot be mobilized, a fenestration operation may be performed after the tympano-meatal flap has healed.

The criteria for selection of cases is less rigid with stapes mobilization than with fenestration surgery. If the bone conduction in the speech range is above 30 decibels, stapes mobilization may be of value, while in fenestration surgery most operators prefer that the bone conduction be near normal levels. However, the fenestration procedure offers hearing improvement to certain congenital ear malformations with hearing loss, while stapes mobilization is of no value in these cases.

Summary

Patients with deafness due to otosclerosis can be greatly improved by several surgical procedures. At present it appears that the stapes mobilization operation should be attempted initially in most cases. By submitting to this relatively simple procedure the patient has a fair chance of gaining a great improvement in hearing. If stapedolysis is unsuccessful and the patient's hearing by bone conduction is near normal levels, a fenestration operation may be performed at a later date. Although the fenestration operation is difficult and the post-operative treatment is somewhat prolonged, a high percentage of success is now obtainable.

It appears that post-operative fixation of the stapes is rare after stapes mobilization is successfully obtained during surgery. As the operation is new, the percentage of re-ankylosis cannot be determined at this time.

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GOTA Y ARTRITIS GOTOSA

L. Maxwell Lockie, M.D.
Charles W. Bishop, M.D.
John H. Talbott, M.D.

LO QUE se presenta es el producto del estudio, comenzado en 1932, sobre pacientes con gota y artritis gotosa. En todos esos años se han hecho grandes adelantos en el diagnóstico y en el tratamiento. En la actualidad muchos médicos pueden hacer un diagnóstico correcto en la primera visita, lo mismo si el enfermo ha tenido muchos ataques que si se encuentra en el medio del primero. Hace 20 años no era raro que el paciente fuéra visto durante largo tiempo sin que se precisara el diagnóstico correcto. Esto representa un gran adelanto en la educación médica.

Existe una gran uniformidad de opinión entre la mayoría de los médicos en cuanto al tra tamiento que debe hacerse en el ataque agudio. El plán que debe seguirse despues de este ataque, sin embargo, varia en diferentes clínicas. Las diferencias son mas claras en lo relativo al empleo de dietas especiales y de alcohol.

Es necesario precisár tres expresiónes que se aplican a casos en que hay un exceso en la concentración del acido úrico del suero: (1) *la hiperuricemia* es un aumento asintomático del acido úrico sérico; (2) *la gota* existe cuando el paciente tiene trastorno hereditario del metabolismo del acido úrico, con o sin antecedentes de artritis gotosa o de tofos visibles; (3) la expresion *artritis gotosa* se aplica a los casos de gota que tienen un ataque típico de artritis que aparece de súbito y desaparece completamente en 4 a 14 dias.

El limite superior de la concentración normal de ácido úrico en el suero es de 6 mg./100 cm.^{3} por el método empleado en Búfalo. Si es mayor, debe pensarse en gota.

Cuando en el paciente sospechoso de gota exista una concentracion normal del acido úrico en el suero puede ser que eso se deba a que:

(1) El paciente haya tomado probenecida, salicilato o cualquier otro agente uricosúrico en las últimas 24 horas.

(2) Los reactivos esten descompuestos (mas de 30 dias de preparados).

(3) El análisis lo haya hecho un técnico sin experiencia.

Debe señalarse que el 5% de los pacientes en el Hospital General de Bñfalo tiene un aumento de acido úrico en el suero, aunque en ellos no se haya hecho diagnóstico do gota ni de artritis gotosa. Estos són los que se clasifican como casos de hiperuricemia.

ÁCIDO ÚRICO:

Los seres humanos normales eliminan por la orina aproximadamente 700 mg. diarios de ácido úrico. Este ácido úrico representa el producto de oxidación final de los compuestos de purina. La mayoría de este ácido úrico se deriva de los compuestos de purina que existen en el organismo; pero la excreción urinaria de ácido úrico aumentará si se ingieren alimentos ricos en purina (hígado, mollejas, anchoas, etc.). Normalmente, en los líquidos orgánicos existen en solución unos 1000 mg. de ácido úrico; este es el total de ácido úrico mezclable. Diariamente se reemplazan 0.75 de este total; esta es la proporción de reemplazo del ácido úrico orgánico. En el gotoso, el total disuelto se duplica, o mas, y la proporción de reemplazo disminuye. Los depósitos sólidos de urato (tofos) en el gotoso ordinariamente no se consideran como parte de ácido úrico mezclable.

URICOLISIS:

En la mayoria de los mamíferos, excepto el hombre y algunos de los primates, existe una enzima llamada uricasa que transforma por oxidación el ácido úrico en alantoina. Nunca se ha demostrado de modo concluyente que esta enzima se encuentre en tejido humano. Generalmente se cree que este tejido no puede oxidar el ácido úrico para transformarlo en alantoina o en otros productos. Se sabe que una dosis intravenosa de ácido úrico iotopo puede ser recuperada solo en parte en el ácido úrico urinario; pero también se ha visto que algo del isotopo se elimina por la bilis y puede encontarse en las heces. Algunos estudios sobre isotopos sugieren que la uricolisis (Desintegración del ácido úrico) puede ocurrir en el hombre. Existen

(English translation on Page 729)

otros investigadores que sostienen que el ácido úrico se segrega en la bilis y se desintegra en el intestino, donde da productos que se reabsorben.

PURINAS:

Como puede verse en el esquema, una purina es un cuerpo con anillo doble que tiene cuatro atomos de nitrogeno. Las purinas corrientes, ademas del acido urico, son la adenina, la guanina, la hipoxanthina y la xantina. Esta ultima puede presentarse en derivados metilatados como cafeína, teofilina y teobromina. Las purinas pueden presentarse combinadas con una molecula de azucar para formar un nucleosido, o con una molecula de azucar y otra de acido forfórico para formar un nucleotido.

PIRIMIDINAS:

Estas tienen una estructura equivalente a la mitad de la de la purina; tienen anillos de seis miembros con dos atomas de nitrogeno. Las pirimidinas, como las purinas, forman tambien nucleosids y nucleotidos. El producto final de su desintegracion es urea mas bien que ácido úrico.

"ANR, AND":

Estas siglas corresponden a ácido nucléico ribósico y ácido nucléico desoxirribósico respectivamente. Tales cuerpos son mezclas de peso molecular elevado compuestas de nucleotidos de la purina y de la pirimidina. Se asocian con proteina para formar nucleoproteina, la cual está reclacionada íntimamente con la estructura y la función celular. El AND, cuyo azucar es la desoxirribosa, se encuentra principalmente en el núcleo celular; el ANR, cuyo azucar es la ribosa, y que tiene una ligera diferencia en su composición pirimidínica, aparece sobre todo en el citoplasma de la célula. Las nucleoproteinas constituyen la substancia fundamental de los cromosomas y, por tanto, actuan como portadoras de la características hereditarias. Forman tambien el medio para la formación de nuevas enzimas. Los virus són moléculas grandes de nucleoproteinas que no tienen vida, pero que, en presencia de células vivas, pueden dar lugar a otras moléculas de la misma configuración. Es indudable que el crecimiento de los tejidos y el cáncer están relacionados con el metabolismo nucleoproteínico, pero todavia no se conoce exactamente la relación que existe entre ellos.

PRECURSORES DEL ÁCIDO ÚRICO Y DE LA PURINA:

No se indispensable suministrár purina al organismo, ya que este puede sintetizarla partiendo de molículas sencillas, tales como la de glicina (aminoacido no esencial), añadiendole groupos de otras moléculas como puede verse en el esquema. Se sabe que en la conversión de la glicina en purinas aparece como uno de los cuerpos intermedios la carboxamida 4-amino-5-imidazola o su ribotida o ribosida; ahora se estan descubriendo otros intermediarios. Los alimentos ricos en purina liberan purinas que pueden ser convertidas en ácido úrico. Las purinas de los alimentos pueden usarse, o nó, para la formacion de ácido nucléico orgánico. A los que padecen de gota generalmente se les prohiben los alimentos ricos en purinas; pero esto no provoca mas que un descenso ligero en la produccionde ácido úrico, de bido a que este puede originarse por distintos procedimientos. Todavia no se conoce bien que influencia ejercen otras substancias de la dieta, como la grasa o el alcohol; pero estas pueden prohibirse en los casos de gota, de acuerdo con la experiencia clínica.

FOSFATOS DE GRAN ENERGIA:

La oxidación orgánica de los alimentos produce energía química, térmica y mecánica. Tal cosa, de acuerdo con la naturaleza del tejido orgánico, no es tan simple como hacer un fuego debajo de una caldera de vapor o quemar la gasolina en una maquina de combustión interna. Es necesario almacenar y liberar cuidadosamente la energia producida por el catabolismo de los alimentos; esto se logra por la fosforilización oxidativa, que da lugar a diversos productos; entre los mas importantes de ellos se encuentran el trifosfato de adenosina y otros cuerpos analogos de purina y pirimidina.

Cuando se hace una historia clínica cuidadosa a menudo se encuentra que la frecuencia de gota en la familia es elevada; muchas veces no se halla esto en la primera visita, pero se descubre procediendo cuidadosamente y consultando con los familares. Los antecedentes personales dados por el enfermo son característicos cuando ha tenido varios ataques de artritis y se ha recuperado completamente de cada uno de ellos.

En el cuadro típico de artritis gotosa los síntomas agudos se presentan en pocas horas. Si la artritis no se trata en lo absoluto, o no se trata

del modo apropiado, por lo regular desaparece completamente dentro de 4 a 14 dias. Este cuadro hace el diagnóstico.

Cualquier articulación puede afectarse, pero atacadas mas frecuentemente son la del dedo gordo o la del tobillo; es raro que se afecte la articulación de la cadera o la del hombro.

El comienzo de la gota es rapido, apareciendo el dolor máximo a las pocas horas, en tanto que la artritis reumatoidea y la osteoartritis se van desarrollando insidiosamente a traves de varios dias o semanas. En la gota las articulaciones son asintomáticas entre los ataques, cosa no sucede en las otras dos enfermedades citadas.

En una articulacioñ gotosa tipica aparecen tumefacción, enrojecimiento, sequedad y *extremada* sensibilidad; al cabo de una semana puede presentarse descamación de la piél.

En la articulación del dedo gordo, que es la que se afecta con mas frecuencia, la sensibilidad es extremada en us cara interna, no en la dorsal ni en la plantar.

Cuando estan afectados el tobillo o el pié, el aspecto se muy semejante al de la celulitis.

En otras articulaciones la enfermedad no tiene un aspecto caracteristico.

Tofos son los depósitos de cristales de urato de sodio en cartílagos, huesos o debajo de la piel. Los sítios en que se encuentran mas a menudo son el borde de la oreja y los huesos de las manos y los pies, cerca de las articulaciones. Es raro que se encuentren tofos visibles a menos que la enfermedad haya existido por largo tiempo y que la concentración del ácido úrico sea mayor de 7, 5 mg. por 100 cm.[3]

Un tofo que contenga cristales de ácido úrico *garantiza* el diognóstico de gota.

Es frecuente que un medico vea un enfermo con artritis en el cual el diagnóstico no este claro. Para precisar si existe o no artritis gotosa, se usa la prueba terapeutica con dosis grandes de colchicina por via oral: 0,5 mg. cada hora hasta que aparezcan náuseas o heces blandas. En los casos de *artritis gotosa* normalmente esto hace desaparecer por completo los sintomas articulares en 24 a 36 horas.

Existen otros medicamentos que pueden producir alivio; pero no son específicos de la artritis gotosa. Los mas importantes de ellos son la fenilbutazona, la cortisona, el ACTH y la prednisona.

En general, el tratamiento del ataque agudo de artritis gotosa resulta satisfactorio tanto para el paciente como para el médico, ya que la recuperación completa se logra rápidamente en comparación con lo que sucede en otras formas de artritis. La terapia de dicho ataque debe instituirse lo mas pronto posible.

Existen diversos tipos de tratamiento para estos casos:

(1) *La colchicina* sóla sigue siendo el medicamento más empleado. Se administra por vía oral en dosis de 0, 5 mg. cada hora hasta que aparezcan náuseas o heces blandas, en cuyo momento hay que suspenderla para que no se presenten diarreas.

La colchicina, despues de las dosis terapeuticas, debe seguirse administrando indefidamente dos veces al día.

(2) *La fenilbutazona* (Butazolidin) ha producido resultados excelentes en muchos casos. La dosis corriente es de 200 mg. cada 2 horas hasta dar tres o cuatro dosis; el tratamiento, pues, es de un solo dia. Con cada dosis se dá una tableta de colchicina; puede considerarse que en estos casos la colchicina actua como catalizador. Esta asociación de medicamentos nos ha dado mejores resultados que cualquiera de ellos usado sólo. Después de la remisión del ataque agudo la colchicina debe darse indefinidamente dos veces al día.

(3) Otro método eficáz para la terapia de la artritis gotosa es administrar *ACTH*, injectando sea 100 unidades intramuscularmento o sea 20 unidades por goteo intravenoso en un periodo de 6 horas. Esto se usa en los enfermos refractarios a la terapia oral. Conjuntamente se da ese día tres veces 0, 5 mg. de colchicina, y se sigue despues con colchicina dos veces diarias por tiempo indefinido.

Durante el ataque agudo el régimen alimenticio debe limitarse a uno rico en carbohidratos, con poca grasa y con los líquidos adecuados. Deben suprimirse la carne, el pescado y las aves hasta que desaparezca el ataque. Sobre el empleo del alcohol existen diversas opiniones.

En el tratamiento de la gota despues del

ataque agudo se siguen algunos principos generales. Antes que nada, se da Benemid (probenecida) para aumentar la eliminación de ácido úrico, lo cual hará descendér la concentración del ácido úrico en el suero a 35%. Esto contribuye a evitar la precipitación de ácido úrico; en pacientes que la han tomado durante largo tiempo han desaparecido los tofos. Dicho medicamento no previene aparición de artritis gotosa aguda ni es de valór en el tratamiento de esa afección. Muy pocas reacciones han ocurrido mientras se ha estado administrando Benemid. A su administración pueden seguir, ocasionalmente, dolores geniturinarios; pero desde que empezó a usarse, en Noviembre de 1950, no se han observado reacciones importantes.

La dosis corriente es de dos tabletas diarias; sin embargo, en algunos casos hay que dar solamente 0,5 g., mientras que en otros deben utilizarse dósis de 3 g. diarios. La concentración conveniente del ácido úrico en el suero parece ser de 4, 5 a 5, mg. por 100 cm.[3]

Ademas, se da 0.5 mg. de colchicina dos veces al día. Regularmente no se observan reacciones. Se usa para hacer abortar ataques ligeros. Si aparece un ataque agudo, se sube la cantidad para dar dósis terpeuticas totales. Muchos pacientes han tomado colchicina durante 5 a 10 anos sin ninguna reacción. Hemos observado que la colchicina, en esta dosificación, disminuye la frecuencia de los ataques.

DIETA:

Debe darse, en general, una dieta rica en carbohidratos, de poca grasa y adecuada en proteinas. Deben suprimirse el hígado, el riñon y las mollejas, debido a que contienen gram cantidad de purina. Si los ataques son determinados por ciertos alimentos específicos, habra que suprimir estos. La dieta debe regularse de modo que se mantenga el peso ideal para la edad y el desarrollo del enfermo.

Alcohol (?)

Los ejercicios moderados parecen ser beneficiosos para el enfermo de gota; desde luego, el tipo de actividad debe depender del estado general del paciente.

GOUT AND GOUTY ARTHRITIS

L. Maxwell Lockie, M.D.
Charles W. Bishop, Ph.D.
John H. Talbott, M.D.

THE MATERIAL presented is the result of the study of patients with gout and gouty arthritis which began in 1932. The progress in diagnosis and treatment over the years has been great. Now many physicians are able to make the correct diagnosis at the time of the *first visit*, whether the patient has had many attacks, or is in the midst of his first bout. Twenty years ago it was not unusual for a patient to be seen over a period of many years before the correct diagnosis was determined. This alone is representative of one great advance in medical education.

There is great uniformity of opinion among most physicians as to the method of treatment of the acute attack. However, the program to follow after the acute attack varies in different clinics. These differences are most apparent regarding the use of special diets and also alcohol.

When the serum uric acid level is increased, there are three terms which must be defined: (1) *Hyper-uricacidemia* is an asymptomatic increased blood serum uric acid. (2) *Gout* exists when a patient has an inherited disorder of uric acid metabolism in which there may or may not be a history of gouty arthritis and/or visible tophi present. (3) *Gouty arthritis* applies to the patient with gout who has a typical attack of arthritis, coming on suddenly and disappearing completely within 4-14 days.

By the method used in Buffalo to determine the serum uric acid level, the upper limit of normal is 6 mg./100 ml. Above that level gout is suspected.

If, in the patient with a presumptive diagnosis of gout, there is a normal serum uric acid, any one of three conditions may exist:

(1) Probenecid, salicylates, or any other uricosuric agents have been taken within 24 hours.

(2) Reagents may have deteriorated (more than 30 days old).

(3) An inexperienced technician may have performed the test.

It is of interest to note that five per cent of patients at the Buffalo General Hospital have an increased serum uric acid, even though there is no established diagnosis of gout or of gouty arthritis. These people are classified under the heading of hyperuricacidemia.

URIC ACID:

Normal humans excrete approximately 700 mg. of uric acid in their urine daily. This uric acid represents the final oxidation product of purine compounds. Most of this uric acid is derived from the purine compounds present in the body, but foods rich in purines (liver, sweetbreads, anchovies, etc.) will increase the urinary excretion of uric acid. The normal human has approximately 1,000 mg. of uric acid in solution in his body fluids. This is called the miscible pool of uric acid. The pool is replaced at the rate of about .75 pools per day. This is called the turnover rate of body uric acid. In the gouty individual, the pool size is increased twofold or more, and the turnover rate is reduced. The solid deposits or urate (tophi) in the gouty individual are usually not considered as part of the miscible pool of body uric acid.

URICOLYSIS:

Most mammals except man and some of the primates oxidize uric acid to allantoin by means of an enzyme called uricase. It has never been proved conclusively that this enzyme is present in human tissue, and it is generally believed that human tissue cannot oxidize uric acid to allantoin or other products. It is known that an intravenously injected dose of isotopic uric acid can only be partially recovered in the urinary uric acid, but it has also been shown that some of the isotope is excreted via the bile and can be recovered in the feces. Some isotopic studies suggest that uricolysis (uric acid breakdown) can take place in the human. Other investigators hold that the uric acid is secreted in the bile, broken down in the intestine, and the breakdown products reabsorbed into the body proper.

PURINES:

A purine is a double ring compound having four nitrogen atoms, as portrayed in the scheme shown. Common purines, in addition to uric acid, are adenine, guanine, hypoxanthine, and xanthine. The latter compound can occur in methylated derivatives such as caffeine, theophylline, and theobromine. The purines can occur in combination with a sugar molecule forming a

nucleoside, or in combination with a molecule each of sugar and phosphoric acid, forming a nucleotide.

PYRAMIDINES:

These are equivalent to half the purine structure. They are six-membered rings with two nitrogen atoms. Like the purines, they also form nucleosides and nucleotides. The end product of their breakdown is urea rather than uric acid.

"RNA, DNA":

These abbreviations stand for ribose nucleic acid and deoxyribose nucleic acid. These compounds are high molecular weight mixtures of purine and pyrimidine nucleotides. They associate with protein to form nucleoprotein. Nucleoprotein is intimately involved in cell structure and function. DNA, which has deoxyribose as its sugar moiety, is primarily found in the cell nucleus. RNA, which has ribose as its sugar and a slight difference in its pyrimidine composition, is primarily found in the cytoplasm of the cell. Nucleoproteins are the stuff of chromosomes and thus act as carriers of hereditary characteristics. They are probably also the templates for new enzyme formation. Viruses are large molecules of nucleoprotein which are non-living per se, but which can reproduce more molecules of the same configuration in the presence of living cells. Tissue growth and cancer are undoubtedly related to nucleoprotein metabolism, but the exact relationships are as yet unknown.

URIC ACID & PURINE PRECURSORS:

The body does not need preformed purine. It can synthesize purine from simple molecules such as glycine (a non-essential amino acid) by adding groups from other molecules as shown in the scheme. A compound, 4-amino5-imidazole carboxamide, or its ribotide or riboside, is known to be an intermediate in the conversion of glycine to purines. Other intermediates are also being discovered. Purine-rich foods yield purines which can be converted to uric acid. Food purines may or may not be used for body nucleic acid formation. Purine-rich foods are usually forbidden in the diet of a gouty patient, but the decrease in uric acid output is only slight because of the other routes of formation of uric acid. The influence of other dietary items such as fat or alcohol are poorly understood at present, although they may be prohibited in the diet of the gouty patient on the basis of clinical experience.

HIGH ENERGY PHOSPHATES:

The body oxidizes food to obtain chemical, thermal, and mechanical energy. Because of the nature of body tissue, this process is not as simple as building a fire under a steam boiler or exploding gasoline in an internal combustion engine. The energy from the catabolism of food must be carefully stored and released. This is accomplished by oxidative phosphorylation, and some of the most important compounds in this process are adenosine triphosphate (ATP) and other similar purine and pyrimidine compounds.

CLINICAL DATA:

The incidence of gout in a family is often found to be high when careful case histories are recorded. Many times such data are not available at the first visit, but with more careful thought and consultation with relatives, pertinent facts are recalled. The personal history given by the patient is characteristic when repeated attacks of arthritis have occurred, with complete recovery following each attack.

The typical pattern of gouty arthritis shows the acute symptoms coming on within a few hours. When the arthritis is untreated or inadequately treated, it usually subsides in 4-14 days with no residues. This pattern is diagnostic.

The sites involved are most often the big toe or the ankle, but any joint may be affected. It is rare for the hip joint or the shoulder joint to be involved.

The onset of gout is measured within a period of a few hours to the point of intensive pain, whereas rheumatoid arthritis and osteoarthritis most often begin insidiously over a period of several days or weeks. In gout the joints become symptom-free between attacks, but not so in rheumatoid or osteoarthritis.

In a typical joint there is swelling, redness, dryness and *extreme* tenderness. Scaling of the skin may follow within a week.

The big toe joint, which is most often involved, is extremely tender on the medial aspect — not on the dorsum or sole of the foot.

When the ankle or foot are involved, the condition closely resembles cellulitis.

Other joints when involved do not have a characteristic appearance.

Tophi are deposits of sodium urate crystals in cartilage, bone or under the skin. The most frequent place to find them is in the margins of the ears or in the bones of the hands and feet, close to the joints. It is unusual for visible tophi

to be present unless the disease is of long standing and the uric acid level is above 7.5 mg. per cent. A tophus which contains uric acid crystals is absolutely diagnostic of gout.

The therapeutic test of full doses of oral colchicine is used to establish the presence or absence of gouty arthritis. Colchicine is given –0.5 mg. at hourly intervals until nausea or a loose bowel movement occurs. Complete recovery of joint symptoms usually occurs in patients with gouty arthritis within 24 to 36 hours.

There are other drugs which may give relief, but they are not specific for gouty arthritis. The most important of these are phenylbutazone, cortisone, ACTH and prednisone.

The treatment of the acute attack of gouty arthritis is usually satisfactory both to the patient and physician, as complete recovery occurs quickly when compared with other forms of arthritis. These methods must be used as early as possible during an attack.

Several types of treatment are available:

(1) *Colchicine* alone remains the most widely-used drug. It is given in a dose of 0.5 mg. orally, every hour, until nausea or a loose bowel movement occurs. It must then be stopped or diarrhea will ensue.

After the therapeutic dosage has been given, colchicine should then be continued twice daily indefinitely.

(2) *Phenylbutazone* (Butazolidin) has been spectacular in many instances. The usual dosage employed is 200 mg. every two hours for three or four doses. This is a one-day treatment. One tablet of colchicine is given with each dose. The action of colchicine here could be explained as that of a "therapeutic catalyst." In our experience, the action of the combination is superior to either agent used alone. After the acute attack has subsided, colchicine should be given twice daily indefinitely.

(3) Another effective method to treat a patient with gouty arthritis is to administer *ACTH*, using either 100 units intramuscularly, or to give 20 units by intravenous drip over a six-hour period. This is given to the patient who is refractive to the above oral type of therapy. At the same time, colchicine 0.5 mg. is given three times that day. It is followed by using colchicine twice daily for an indefinite period.

During an acute attack, the diet should be limited to one which is high in carbohydrates, low in fat, and with adequate fluids. Meat, fish and fowl should be omitted until the attack is over. Alcohol is a debatable question.

In the treatment of gout, following the acute attack, a few general principles are carried out. First of all, probenecid "Benemid" is given to increase the uric acid excretion. It will lower the level of the serum uric acid by 35 per cent. By this means, it tends to prevent the deposition of uric acid in the body. Tophi have disappeared in patients who have taken it over a long period of time. Probenecid "Benemid" does not prevent the occurrence of acute gouty arthritis, nor is it of value in the treatment of acute gouty arthritis. Very few reactions have occurred while it is being administered. Occasionally, genito-urinary pain will follow its administration, but no serious reactions have been observed since it was first used in November, 1950. The usual dosage is two tablets per day. However, in some cases, it is necessary to give only 0.5 gram, while in others, the dosage may be increased to 3 grams daily. The desirable level of serum uric acid seems to be between 4.5 and 5.5 mg./100 ml.

In addition, colchicine 0.5 mg. is given twice daily. Usually no reactions are observed. It is used in an attempt to abort mild attacks. If an acute attack does occur, the dosage is stepped up to full therapeutic levels. There are many patients who have taken colchicine over a period of 5-10 years without any untoward effects. It is our observation that colchicine in this dosage diminishes the frequency of attacks.

DIET:

In general, it should be one which is high in carbohydrates, low in fat and adequate in protein. Liver, kidney and sweetbreads should be omitted due to their high purine content. If specific foods precipitate attacks, these should be interdicted. The diet is to be regulated so that an ideal weight for age and body weight is maintained. – Alcohol (?)

Moderate exercise seems to be beneficial for patients with gout. Naturally, the patient's general condition should govern the type of activity.

CONCLUSION:

With present day treatment, consisting of colchicine and phenylbutazone (Butazolidin) given promptly, attacks of acute gouty arthritis are of short duration. Also, with daily maintenance administration of colchicine and probenecid ("Benemid"), future attacks are decreased and tophus formation prevented.

SPEECH CORRECTION FOR THE BUSY PHYSICIAN

By Norman E. Iverson, Ph. D.

Phoenix, Arizona

SPEECH is the principal means by which human beings express their feelings, share experiences, and interchange ideas. Except for tactile sensations, speech affords the most intimate means of personal inter-relationship for all human beings. Therefore, the need for speech assumes the force and status of a "basic drive." Whenever this basic drive for speech is frustrated by a speech disorder, the result is the growth of numerous deviant symptoms, including aggressiveness, hostility, and resentment. The frustrated individual with a speech disorder learns to adapt to his environment with inefficient and often hostile defense mechanisms. Since hostile defense mechanisms are not primarily rewarding, the individual most generally shifts to less-threatening behavior, which is characterized by withdrawal, shame, embarrassment, inferiority, and insecurity. Speech does not ocur in a vacuum, but in a very complex social matrix which presents numerous problems. This paper will attempt to discuss these problems and what the busy physician can DO about them.

Because of insufficient time, medical school training and internship experience in the United States often fails to include systematic and thorough study of speech and its disorders. This is true even in the specialized areas of orthopedics, otolaryngology, pediatrics, psychiatry, and neurology. The result of this condition is that most physicians are not thoroughly prepared by special training to examine, diagnose, or to treat speech disorders. Although the incidence of speech disorders among patients seen by physicians is high, with few exceptions the patient with a speech disorder must turn elsewhere than to his physician for the help he urgently needs. To whom can he turn? The speech pathologist, with the degree of Doctor of Philosophy, is qualified to answer this felt need.

GENERAL PROBLEMS

Problems presented by speech-handicapped individuals are predominantly educational, social, emotional, and managerial. The child with a speech disorder may appear to be retarded scholastically when actually he is not. Speech disorders tend to impair the child's relationship with his parents. If the speech disorder is unattended, the child may become more and more insecure, hostile, and socially withdrawn. Because of subtle and often unconscious rejection of the child by his parents, which he inevitably interprets as a "loss of love," he fails to establish a warm, normally-intimate family relationship. He "loses" love, which fills him with vague and ill-defined insecurity. In these circumstances, rehabilitation is very difficult. The actual degree to which his life can be integrated effectively and happily into the life of his family will depend heavily upon the degree of impairment of his speech function (3).

One important aspect of the general problem faced by children with speech disorders is that their difficulties are generally unrecognized and usually misunderstood. Because of "social penalty" involved, the child with a serious speech disorder soon learns not to talk any more than necessary, except with his closest friends. Thus, his speech disorder often avoids detection, and he "masquerades" as if his speech were entirely normal. The cumulative effect of this evasiveness is that the speech-handicapped individual becomes even more "out of tune" with his environment. He becomes even more misunderstood, rejected, and penalized. The emotional-social life of a child with a serious speech disorder, therefore, is soon characterized by repeated frustrations, and eventual demoralization.

THE INCIDENCE OF SPEECH DISORDERS

How prevalent are speech disorders? The Mid-century White House Conference on Children and Youth, in 1951, disclosed that the incidence of speech disorders, "in the lowest defensible estimates," was 5 per cent of the assumed total population of the United States. Speech disorders studied at this conference, by type, included: 1) dyslalia; 2) dysphemia; 3) delayed speech; 4) dysphonia; 5) speech associated with cerebral palsy; 6) speech associated with cleft palate;

7) anacusis, paracusis, and hypacusis. (3).

Speech disorders differ with respect to their etiology, symtomatology, and peculiar social matrix. These differences largely determine the course to be taken in therapy. It can be seen, therefore, that it is extremely important to make a proper diagnosis. An integrated attack upon the problem of disordered speech by the physician AND the speech pathologist would prevent and alleviate adverse effects of disordered speech. In the opinion of the writer, no other approach has as much to offer the patient with a speech disorder. It behooves the physician, therefore, to acquaint himself with minimal facts and procedures for rehabilitating the patient with a speech disorder.

WHAT CAN THE PHYSICIAN DO ABOUT SPEECH DISORDERS?

In addition to providing routine medical care and treatment for his patient, the physician should know when to refer him for qualified attention. This asks that the physician become familiar with principal types of speech disorders and recommended practice consistent with each type of defect. A brief discussion of "types" of spech disorders is therefore appropriate, together with suggestions regarding current speech correction practice as interpreted by the writer. The following material is not intended as a "quick course" in speech correction. The interested physician is respectfully urged to consult one of the many appropriate texts on this subject, a few of which will be listed in the bibliography. The following descriptions, therefore, are presented as "thumbnail sketches" of popular speech disorders and speech correction practices, specifically for the BUSY PHYSICIAN, and what physician isn't busy these days?

DYSLALIA

The dyslalias, or functional articulatory disorders, constitute 70 to 85 per cent of the speech correction problem. Dyslalias are primarily "disorders of articulation" resembling "baby talk" of early childhood. Dyslalias consist predominantly of substitutions, omissions, distortions, and additions of important speech sounds. For example, a patient with dyslalia may say: "Wed," for "red"; "pah," for "pop"; "shister" for "sister"; or "stalt," for "salt."

Causes of dyslalia are legion. Usually, however, it is difficult to demonstrate physical pathology, except for a high incidence of retarded diadochocinesis. Sometimes dyslalia is even the result of faithful imitation by the child of his parents, who frequently consider misarticulation at an early age "cute."

Prognosis for the dyslalias is usually excellent provided there is no appreciable delay in consulting qualified assistance. Dyslalia is most easily corrected by the speech pathologist while the patient is between four and seven years of age. Delay beyond this age serves only to strengthen faulty speech patterns. "Conditioned" misarticulation patterns resulting from such delay can be most resistant to correction. Individual clinical speech correction under the expert direction of a qualified speech pathologist corrects most speech failures if the specialist is consulted early enough. Contrary to popular opinion, parents are seldom able to correct speech disorders affecting their own children. Contrary also to well-intended advice by many physicians, true speech disorders are NOT outgrown.

DYSPHEMIA

Dysphemia includes disorders of speech rhythm, or "stuttering," "stammering," and "cluttering." Stuttering is an ambiguous and controversial term. The author prefers to use "non-fluency" when speaking of this phenomenon. The speech disorder this term attempts to describe has both "primary" and "secondary" symptomatology. The PRIMARY stage of dysphemia is very typically an exaggeration of normal non-fluencies which accompany all early speech effort. Any undue stress and strain in interpersonal relations during the period from three to five years of age is very apt to bring about these exaggerated non-fluencies. This is particularly true if parental figures display even the *slightest* alarm or displeasure with the child's non-fluency patterns.

In most instances, correction of PRIMARY non-fluency is not difficult. Most speech pathologists alleviate primary symptoms of non-fluency by environmental manipulation and parental counseling. Much of the "correction" of primary dysphemia is achieved through the establishment of a permissive, relaxed, and less-demanding total environment for the child. In working with primary symptoms, the speech pathologist assists the parent to become more tolerant and

permissive in his relationships with the child, which include giving "undivided" attention when the child is trying to communicate. In many instances of primary dysphemia, environmental manipulation and parental counseling is the only correction necessary to alleviate the distressing symptom. This is particularly true when parents are co-operative and understanding.

"Secondary" dysphemia, which is much more serious, occurs when the primary symptom has reached the child's awareness because of "social penalties." At this stage, efforts are consciously made by the dysphemic patient to "conceal" his symptoms. He tries, in vain, to avoid the disclosure of his non-fluency patterns. To accomplish this concealment, the dysphemic patient invents numerous "devices" and distractions to help him avoid embarrassment. Unfortunately, his contortions and devices enjoy little success, and instead of concealing, they invariably serve to *strengthen* and *reinforce* his symptom. Each new device is doomed to fail. Each new device tends to become habitual.

The subject with *secondary* dysphemia should receive IMMEDIATE corrective attention. Medical examination and treatment, if needed, should be accomplished prior to, or during, speech correction. When *secondary* symptoms are of an extended period, they are usually most resistant to correction. Secondary dysphemia is often associated with deep emotional conflicts, and optimum correction requires the combined services of the psychiatrist and the speech pathologist. A combined psychiatric-speech-relearning approach often helps the most resistant dysphemia. Autosuggestion is a valuable clinical tool in the correction of dysphemia. After having been trained in autosuggestion, it is easier for the dysphemic patient to acquire necessary techniques for bodily relaxation and control.

The physician can and should reassure parents that most PRIMARY dysphemia can be "cured" if it is seen early enough by the speech pathologist. The incidence of "cure" for *secondary* dysphemia, however, is disappointing. However, *all* patients with dysphemia can be greatly helped by early corrective therapy.

DELAYED SPEECH

Most physicians are well acquainted with developmental norms. It is the rare physician, however, who is acquainted with the "upper limits of normalcy" for the development of specific speech sounds in our language. Entirely too often, the physician gives sincere and well-intended advice to the parent that the child "will outgrow" his speech disorder "in due time." Contrary to this belief, however, many speech disorders are never outgrown. Even if spontaneous disappearance of a patient's symptom occurs, it usually happens so late in his life that he has already been crippled by very undesirable and lasting emotional reactions.

Upper limits of normalcy. Conservatively speaking, by the time the child is 3½ years of age, he should have acquired most of the vowel sounds, and consonants p, b, m, w, and h. By 4½ years of age, he should add t, d, n, g, k, ing, and j sounds. The child is given another whole year to acquire the consonant f. At 6½ years of age, the child's speech should include v, th, (as in "brother"), zh, (as in "azure"), sh, (as in "show"), and l. By the time he is 7½ years old, the child should have acquired the remaining consonants z, s, r, th, (as in "think"), and wh, (as in "wheel"). "Upper limits of normalcy" refers to the consistent use of these sounds in actual words and combinations that are meaningful to the child. A child who is 3½ years old or less should therefore not be considered abnormal in speech function if he does not consistently use any of the scheduled sounds. A healthy child below three years of age who has practically no intelligible speech is, therefore, not necessarily "abnormal." Parents of such a child often become anxious when they see and hear another precocious child of 18 months who can say words distinctly. The physician's familiarity with these upper limits of speech will enable him to reassure parents of the sturdy child of five who is unable to make the sounds of r and s. As the child "grows" in speech, he gradually acquires the more difficult consonant blends, such as: gr, br, fr, sl, gl, spr, thr, etc. There is need for more specific information with respect to this whole concept of "retardation" in speech.

Too often retarded speech is associated with general social, intellectual and developmental retardation. Too often, parents naively feel that their child's retardation and speech failure is due to the fact that he has not acquired speech for some mysterious reason. Usually, facts support just the opposite contention. That is, the

retardation in speech is *symptomatic* of generalized retardation in other skills. Absence of speech is more often the *result of* rather than the *cause* of retardation. In these cases, psychological testing is mandatory in order to establish social, intellectual, and developmental norms as an aid to diagnosis.

It would be a serious error if the pathologist were to work in cases of this kind with the symptom itself. More often than not, speech deviations and speech disorders are merely symptoms of deeper more underlying deviations and difficulties.

DYSPHONIA

Faulty phonation, or voice problems, are predominantly the result of disorders of pitch, loudness, or quality. The otolaryngologist sees many of these problems in his practice. When there is no active pathology in the larynx, the physician should refer the patient with dysphonia to the speech pathologist for correction. Ethical speech pathologists do not accept patients with dysphonia for correction unless they have been referred by a responsible physician.

In addition to being an organic problem, dysphonia is often associated with emotional maladjustment. In this instance the patient requires speech *and* personality retraining. Careful personality diagnosis is a prerequisite to successful therapy for the emotionally disturbed patient with dysphonia. Some speech pathologists are sufficiently trained in psychodiagnostic testing techniques to properly ascertain the severity of the patient's emotional disturbance. The ethical speech pathologist seeks the assistance of the psychiatrist whenever there is related evidence for hysterical symptoms or other deep-seated emotional problems.

Severe symptoms of anxiety often accompany voice disorders. Few cases of anxiety exceed that which follows the total loss of one's voice, or aphonia. Until recent years, laryngectomized patients who must suddenly face aphonia, or complete loss of voice, were very often candidates for severe post-operative depression. Today, however, thanks to the development of "esophageal speech" by speech pathologists, severe post-operative depression following laryngectomy is infrequent. Today's alert surgeon knows that candidates for laryngectomy should now be given valuable anxiety reducing "speech insurance" training in esophageal speech *prior* to surgery.

The speech correctionist teaches these preoperative patients to utilize esophageal "belching" of air for phonation. The patient is then taught to phonate and to articulate upon this stream of belched air. By "normal" modulation of this compensatory phonation, the patient quickly develops satisfactory functional speech. Depression and anxiety are thus greatly reduced as speech proficiency is developed. Except for a somewhat "hoarse" quality, good esophageal speech is difficult to discriminate from normal laryngeal speech. It is therefore good therapeutic "insurance" to refer patients for laryngectomy to the speech pathologist *prior* to operative procedures. The shock of the resulting aphonia is thus greatly reduced, and the entire operative procedure is easier for the patient to accept.

SPEECH ASSOCIATED WITH CEREBRAL PALSY

Dsylalia, dysarthria, and dysphasia are important sequelae to cerebral palsy. Seventy per cent of patients with cerebral palsy are in need of expert speech correction. Half of the patients with cerebral palsy have *severely* defective speech. "Cerebral palsy speech" is characterized by many types of speech disorders, including dysphemia and halting rate of speech, dyslalia, and dysphonia. The speech of the patient with cerebral palsy may also lack flexibility, resonance, and control. It may also be characterized by erratic intensity and pitch. Articulatory disorders may develop to the point of unintelligibility(12). In many instances, patients with cerebral palsy also demonstrate characteristic symptoms of brain injury, which will be discussed in a later section of this paper.

Thanks to the efforts of several national agencies, most cases of cerebral palsy are now diagnosed early, and referred for corrective attention. Today, the child with cerebral palsy soon comes under the expert care and guidance of rehabilitation centers, most of which are directly associated with some national agency. Through such agencies, the child with cerebral palsy receives an integrated program of therapy, including the services of medical specialists: pediatricians, orthopedists, neurologists, psy-

chiatrists, psychologists, speech therapists, social workers, and vocational rehabilitation counselors. These specialists recognize the need for, and actively encourage the early treatment of the various disorders which accompany cerebral palsy.

SPEECH ASSOCIATED WITH CLEFT PALATE

"Cleft palate speech" is usually characterized by rhinolalia aperta, or hypernasality, and various other symptoms of dyslalia. With cleft palate, it is very desirable for the physician to consider the feasibility of operative repair. The earlier the cleft repair is accomplished, the better. Most physicians and surgeons are very familiar with operative hazards and problems in cleft palate repair. One recently-added *major criteria* for the "successful" operative repair of cleft palate, which should be emphasized, is the post-operative *speech function* of the repaired velar tissues. If post-operative speech can not be achieved due to faulty tissue innervation or due to other operative procedures, the operation is not considered "successful."

Prosthedontia is often used to effect a velar-pharyngeal closure. In these instances, referral to the speech pathologist is also desirable. This insures proper training and development of techniques for successful velar closure, and provides "speech insurance" as well. Six or seven years of patient, corrective treatment and understanding attention are often necessary for the successful correction of cleft palate speech. Early referral insures a more favorable prognosis for speech development.

ANACUSIS, HYPACUSIS, and PARACUSIS

The incidence of speech disorders arising from faulty speech perception is relatively high. There are an estimated one and one-half to three million hard of hearing persons in the United States. Most of these persons suffer a loss of acuity to and discrimination of high frequency sounds. This perceptual loss is nearly always accompanied by a parallel loss of production of high frequency sounds, such as the sibilants s, z, ch, and sh.

The severity of the speech disorder in paracusis is highly correlated with the age of onset and severity of aural impairment. Careful diagnosis is *mandatory*. The diagnosing specialist must keep in mind that *one* ear with a normal threshold of hearing is sufficient for the development of normal speech. If it can be demonstrated that the child with a speech disorder of suspected perceptual origin has a normal hearing threshold in one ear, the speech disorder must be attributed to causes *other than* the impairment of hearing for the other ear. To affect the production of speech, paracusis must be bilateral, regardless of the dysfunction it may demonstrate unilaterally.

When paracusis occurs after speech has been acquired, the most usual effect upon speech is monotony of pitch level. If it is acquired prior to the development of speech, the sounds whose essential movements are in back of the mouth, and are thus "invisible," are learned only with great difficulty.

In hearing impairment of conductive origin, the speech of the patient is apt to be subdued in volume, whereas in hearing impairment of perceptive origin, the patient does not have the benefit of bone conduction, and may actually *shout*. In conductive loss, there is a monotony of volume and pitch level. In perceptive loss, the voice may show exaggerated modulations in volume.

To educate a child with any degree of hearing loss exceeding 30 decibels, it is necessary to utilize the full remnant of his residual hearing. This usually requires the use of electronic amplification. The speech pathologist usually has electronic amplification equipment available for diagnosis and therapy. The hard of hearing patient also needs speech correction to develop other senses to assist in his adjustment to diminished hearing reception. This is particularly true for learning and controlling speech. The additional senses most often utilized are vision, kinesthesia, and cutaneous sensation.

Prognosis for speech in conductive impairment is better than it is for perceptive impairment. The patient's intelligence is a major factor in predicting the success for speech correction in either type of impairment.

Many times, severe depression accompanies a loss of hearing. Psychologically, this is felt to be due to the "deadness" that results from the severence of the patient's "world of sound." Whenever he thus becomes isolated from the world of sound, the patient becomes unduly

anxious and depressed. This is felt to be due to the fact that the patient misses the unconscious "coupling effect" of the constant, rhythmical, auditory "ebb and flow" of sound patterns which serve to link us securely with the world of reality. For these patients, amplification of sounds literally performs "miracles" of revitalization, particularly when auditory training is made available to insure the full development and appreciation of the "coupling effect" with reality.

Otolaryngologists are becoming increasingly aware of the advantages and importance of careful audiometric testing for critical otological diagnosis. Diagnostic audiometric testing is best accomplished by a qualified audiologist. Audiologists are persons who have had extensive training, specialization, and experience in hearing problems and psychoacoustic hearing manifestations for individuals. Audiometric testing functions best in close cooperation with the medical profession. A "peripheral" relationship and contact between the person trained in audiology and the physician will not serve the hard of hearing patient as he should be served. The audiologist deserves to be considered a full member of the diagnostic team, and not a mere "manipulator" of admittedly intricate electronic equipment(7).

The concept of rehabilitating the aurally handicapped individual now reaches beyond the medical and surgical boundaries. The physician is beginning to recognize the important diagnostic service to be had from consultation with specialists who have at least basic clinical certification in audiology. Often the speech pathologist, in recognition of the *close affinity* between hearing and speech, has achieved at least basic certification in audiology.

DYSPHASIA

The incidence of dysphasia among children is much higher than some physicians realize. Obstetricians and pediatricians are well aware of hemorrhage to the fundi of the eye that often accompanies a large percentage of so-called "normal" births. It would seem reasonable to assume in these cases that hemorrhage might easily have been more diffuse, resulting in petechial hemorrhage throughout the white matter and basal ganglia of the brain.

Whenever trauma occurs to the central nervous system prior to the acquisition of speech and particularly when it occurs to cortical tissue, the resulting dysfunction is quite apparent. Symptoms of cerebral damage usually become known during the first year of life, although frequently the resulting "organicity" goes undetected for years. Early speech symptoms in organicity include late onset of speech, "aphasic-like" symptoms, distorted phonation, singlingualism, and "idioglossia."

The so-called "brain-injured child" is the major character included in the category of dysphasia. Brain-injured children are characterized by diffuse behavioral symptoms. Their behavioral symptoms include: disordered thought processes; a lack of awareness of purpose; an inability to react to stimuli of sufficient intensity; disorders of the capacity to discriminate between relevant and irrelevant perceptions; and disordered tenacity, or the ability to pursue a goal until it is achieved. In these patients, the physician is also soon aware of hyperkinesis, hypermotility, disinhibition, or the so-called "organic driveness"(4) (11). In training dysphasic brain-injured children, speech too often must be considered *secondary* to managerial problems.

Learning procedures of any kind for brain-injured patients requires that the physician bring "hyper" symptoms under some degree of control. This is usually accomplished through the use of one or more of the currently available anticonvulsant drugs. The child who suffers from "forced attentiveness" to every conceivable external and internal irrelevant stimuli is in dire need of all of the additional synergistic palliation at our command. These managerial considerations are prerequisite to *all* learning activities, including speech training. It is necessary that the therapeutic atmosphere for the brain-injured child be intensified, constant, and under conditions of greatly reduced irrelevant stimulation. He seems to profit most from specialized training schools and centers where his "every waking hour" is under constant training and supervision. Such training usually includes self-help, occupation, self-direction, socialization, and communication.

Brain-injured adults suffer various degrees of disability, and demonstrate two general types of symptoms: 1) those which are an expression of a change in their whole personality; 2)

and those which are expressions of the organism's struggle with its impairment(4). Homeostatic imbalance is a frequent phenomenon. Many of their symptoms are expressions of a systematic disintegration of the organism. In these latter instances, there may be: 1) an abnormal spread of neural excitation; 2) a rise of threshold and a retardation of excitation; 3) undue influence of external stimuli; or, 4) a general "blurring" of the sharp boundaries between "figure" and "ground." Often, there are symptoms which represent an impairment of a specific "attitude." In this sense, "attitude" is seen as a continuum from concrete to abstract.

Loss of "abstract attitude" is responsible for many, often "bizarre," symptoms in brain-injured adults, including: 1) disturbed planning ability, 2) disturbed spatial relations, 3) confused memory span, and 4) "ego-detachment"(4) (6).

Although neurosurgeons see many adult brain-injured patients, the high incidence of head injury in these days of high speed and busy highways makes the incidence of brain-injury high in the practice of *most* physicians. Probably the most important aspect of retraining the adult dyspasic patient is the often unrealized need for *early referral* to a qualified speech pathologist. Post-operative patients should be seen, for example, *before* they are able to leave the hospital. Any delay in retraining causes an almost logarithmic increase in time and effort necessary for the rehabilitation of speech and language functions.

The more "global" injuries, which result from massive cerebral hemorrhage and other traumatic and nontraumatic hematomas, are not prognostically favorable for speech training. This emphasizes the need for accurate diagnosis in dsyphasia. Whenever there is serious disturbance of "abstract attitude," which can be determined by the well-trained speech pathologist through the use of psychodiagnostic tests, prognosis is poor. One fundamental prerequisite to speech retraining is the physician's assurance that pathology, if present, is arrested.

Other frequent and distressing sequelae in dysphasia may include mental symptoms, emotional instability, thalamic pain syndromes, homonymous hemianopsia and more or less "permanent" dysphasia.

Dysphasic adults have shown remarkable recovery under private individual therapy sessions. A legitimate speech pathologist should have the necessary training and experience to provide proper diagnosis and training for functional language disorders in dysphasia and related symptoms. For best prognosis, it is mandatory that the physician make an *early* referral.

Frequently the patient with dysphasia has a history of pre-morbid personality maladjustment which precludes co-operative effort on his part in the difficult therapeutic process. The cerebral trauma in these instances acts as a catalyst, and precipitates post-traumatic psychoneuroses and psychotic symptoms. The psychiatrist is the logical person to treat and evaluate post-traumatic emotional disturbances in adult brain injury. Prognosis for rehabilitation in these cases is naturally less favorable. Often, whenever there is severe post-traumatic personality change, it is the psychiatrist who must decide which of the patient's symptoms to retain and which to attempt to change.

WHO IS THE SPEECH PATHOLOGIST?

Training received by speech pathologists differs in the areas of emphasis among the universities and colleges who confer the M.A. and Ph.D. degree in speech correction. The particular emphasis received by the student of speech pathology is dependent, in large measure, upon the philosophy and departmental affiliation of speech correction at the particular institution of his choice. In some universities and colleges, speech correction is an integral part of "special education." In other institutions, speech correction is a specialty associated with clinical psychology. In still other instances, speech correction evolves out of the general speech or English departments. In spite of this diversified background, however, the training of qualified speech correctionists has emphasized an integration of current medical and speech correction principles and research. There is no consistent policy for training speech pathologists, in some major respects, in the United States. Regardless of his training, however, the professional preparation and *certification* of speech correctionists insists upon particular co-operation with physicians, public health nurses, dentists, social workers, clinical psychologists, ministers, school teachers and administrators, vocational rehabilitation counselors, and parents.

Although many competent speech correctionists have only a master's degree, the highest professional level of qualification is the degree of doctor of philosophy. The qualified speech pathologist also will have attained either basic or advanced clinical certification with his parent organization, the American Speech and Hearing Association. All certified professional speech correctionists are listed in directories published by the American Speech and Hearing Association, which are available in most libraries. As with most professional groups, however, mere membership in his professional organization does not constitute an endorsement of his qualifications or practice. Like the physician, the speech pathologist is "judged" by his personal qualifications and training, his experience, his ability, and his ethics.

EDUCATIONAL PRINCIPLES OF SPEECH CORRECTION

The educational principles that underlie the practical application of speech correction are sound principles for all. These principles, in fact, serve as an example of efficient democratic living and healthy personality training(3).

The qualified speech pathologist explores the specific needs of his patient, and "designs" individual instruction and personal attention as indicated by these needs. He, like the physician, has a deep respect for the person with a speech disorder as a unique human being. Both the speech pathologist and the physician recognize that the child's "inalienable right" is to be accepted as a unique individual by all persons, including his adult authoritarian figures. The child needs protection from distortions, unnecessary deprivations, and exploitations by all adults. The ideal program for speech correction has its foundation upon this principle of individuality.

Social behavior is implicit in the speech function, and social reward should accompany correct speech. There is a very close correlation between speech and personality, and everything possible should be done to improve personality growth and personal adjustment during the time the person with defective speech is engaged in formal speech improvement training.

The qualified speech pathologist recognizes that the most important aspect of intelligent handling of the patient with a speech disorder is an accurate and thorough diagnosis. Emotional aspects of the speech disorder make mandatory a thorough evaluation, prior to therapy, of the patient's intellectual and emotional assets and liabilities. This evaluation should consist of a psychological "battery" of tests of sufficient diversity to provide a "cross-section" of existing personality structure, as well as a panorama of developmental fixations and traumas directly or indirectly contributing to personality and symptom formation.

In recognition of this unique, "whole personality" approach to speech correction, some speech pathologists have insisted that their professional training include psychodiagnostic test administration and interpretation, as well as sound procedures for the use of psychotherapy.

Speech pathologists in your area can usually be reached by consulting the appropriate section of your telephone directory. If none are listed in your telephone directory, they can be located by geographic area in the directories published by the American Speech and Hearing Association.

Speech correction is a relatively new profession. There are not many speech correctionists in private practice. Most speech correctionists are affiliated with universities and other organizations designed primarily as training centers for public school speech correctionists. Many areas do not have a public school correctionist. Many public school correctionists have tremendous "case loads," and therefore have very limited clinical time to spend with the child who needs individual clinical attention. The public school correctionist often needs to refer more difficult cases to the speech correctionist in private practice.

Most speech pathologists in private practice prefer that their patients be referred by physicians. In some instances, however, referrals originate from dentists, social agencies, schools, and ministers. When this occurs, it is standard operating procedure for the speech pathologist to insist upon a thorough medical examination prior to the beginning of therapy.

Often the question of group versus individual therapy is brought to the attention of the physician. This is particularly true if there are university and college speech clinics near at hand. Too often group therapy, as provided by

such clinics, is excellent training for embryonic speech correctionists, but falls far short of the mark in terms of actual, economical and consistent benefit to the patient. A program of individual, intensified and socialized speech correction, in conjunction with either nursery school or public school training, offers the most economical and surest route to correct speech and social rehabilitation.

In private practice, the correctionist must produce measurable results. The "pressure" he undergoes to establish demonstable results of his corrective procedures is not as dominant in many "group" situations. The speech correctionist in private practice who does not produce results soon leaves private practice to seek gainful and secure livelihood elsewhere. As with most professions, the speech pathologist's roster of subjects tends to serve somewhat as an "index" to his professional proficiency.

In private practice, the speech pathologist generally prefers that the physician make referral arrangements for the patient with a speech disorder. When this is done, relevant material of importance to speech diagnosis and therapy is provided and discussed. Relevant material covering medical examinations, lab tests, and specific neurological findings is most important to the speech correctionist, particularly whenever the referral involves any remote possibility of unarrested pathology.

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The President's Page

From the AMA Washington letter 85-40 dated Oct. 4, 1957:

"WITHIN THE NEXT 25 YEARS, HOSPITALS WILL BE PROVIDING AT LEAST AS MUCH PREVENTIVE SERVICE AS CURATIVE SERVICE," ACCORDING TO MR. FOGARTY. "HOSPITALS, IN FACT, ARE MOVING CLOSER EACH MOMENT TO THE DAY WHEN HOSPITALS WILL BE THE FOCAL POINT OF HEALTH SERVICES FOR ALL OF US THROUGHOUT OUR ENTIRE LIVES."

ON THE ROLE OF GOVERNMENT IN HEALTH, MR. FOGARTY HAD THIS COMMENT: "IT IS NOW GENERALLY ACCEPTED THAT THE HEALTH OF OUR PEOPLE IS A MAJOR NATIONAL RESOURCE AND THAT THE GOVERNMENT, THEREFORE, HAS A DIRECT RESPONSIBILITY FOR THE HEALTH OF EVERYONE . . ." AHA MADE MR. FOGARTY AN HONORARY MEMBER, CITING HIS EFFORTS IN MEDICAL RESEARCH FUNDS AND HEALTH FACILITIES.

MR. JOHN FOGARTY (D., R.I.), CHAIRMAN OF THE HOUSE APPROPRIATIONS COMMITTEE ON THE HEW BUDGET, MADE THIS STATEMENT IN AN ADDRESS TO AMERICAN HOSPITAL ASSOCIATION'S ANNUAL CONVENTION.

SO YOU THOUGHT THAT SOCIALIZATION OF MEDICINE WAS DEAD.

IF THE GOVERNMENT "GIVES" MONEY AS HILL-BURTON FUNDS, MEDICAL SCHOOL GRANTS, ETC., THEY (THE DO-GOODERS) ARE ACTIVELY PLANNING ON MOVING IN JUST AS FAST AS THEY DARE.

IT WAS APPARENT TO ME THAT OUR HOSPITAL FRIENDS OF AHA WERE FOLLOWING THIS TRACK WHEN THEY STARTED THEIR 13 STORY BUILDING ON LAKE SHORE DRIVE IN CHICAGO.

UNDER VARIOUS DISGUISES THE HOSPITALS ARE MOVING INTO THE PRACTICE OF MEDICINE AND WILL CONTINUE TO DO SO UNLESS YOU, EACH AND EVERY ONE OF YOU, STAND UP AND BE COUNTED AS FOR OR AGAINST THIS ENCROACHMENT. BEWARE OF THE DAY WHEN HOSPITALS RENT YOU YOUR OFFICES IN EXCHANGE FOR GUARANTEEING YOU A BED. THE LABORATORY, X-RAY AND PHARMACY ARE PROFITABLE ENTERPRISES FOR THE HOSPITAL TO MAINTAIN. THE FIRST TWO ARE DEFINITELY IN THE FIELD OF MEDICINE AND SHOULD BE CONSIDERED AS THE CORPORATE PRACTICE OF MEDICINE.

BEWARE OF THE HOSPITALS DICTATING THROUGH BLUE CROSS TO BLUE SHIELD. THE SUPERSTRUCTURE SET UP BY THE LARGER PLANS OF BLUE CROSS TO CIRCUMVENT THE JOINT COMMISSION OF BLUE CROSS AND BLUE SHIELD IS A CASE IN POINT.

MAY THE HOLIDAY SEASON BE HAPPY AND THE NEW YEAR PROSPEROUS FOR ALL OF YOU.

C. C. CRAIG, M.D., President,
The Arizona Medical Association, Inc.

Editorial Page

ARIZONA MEDICINE

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notifed within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

SHOULD ARIZONA ESTABLISH A MEDICAL SCHOOL?

THE population growth in the United States would indicate that by 1965 the number of students enrolled in our facilities of higher education will approximately double. Obviously, in association with the population growth of this extent there will be an increased demand for the services in the health field; that is, for more physicians, dentists, nurses, and so forth. To date, Arizona has recognized this need for access to educational opportunities beyond those that are available within the state and it is participating in the program of the Western Interstate Commission for Higher Education. In 1956 this necessitated financial support to 57 students, 24 of them medical students, 24 veterinary students and 9 dental students. California and Washington have now joined the compact which makes six additional medical schools potentially available to Arizona students. Changes in the present law decreasing the necessary 10-year residence to make the student eligible for aid, and alterations in the repayment demands would lead to a more satisfactory and helpful program.

Recently interest has been evident in the state medical association and in the state legislature as to the feasibility and desirability of developing a medical school within the state. Then, if a school is established, should it be a two year or a four year school? If established, which should be its location — in the Tempe area, or in Tucson?

The organization of a medical school would obviously make a considerable impact upon the existing educational programs within Arizona not only as an aid to them but also in the educational tax structure. Secondly, the impact upon the medical profession in the state would be quite enormous and, of course, there would be certain developments in relation to the citizens of the state.

Two-Year Medical Schools

Until recently North Carolina, Missouri, Mississippi, West Virginia and Utah had two year medical schools. These have now been expanded to four year programs. Only three two-year medical schools in the United States remain today. They are at Dartmouth, North

Dakota and South Dakota. The major reason for the existence of two-year medical schools seems to be to afford an opportunity for medical education to students in the state who otherwise could not enter medicine. It is believed that the establishment of a two-year medical school in Arizona would undoubtedly lead to an increase in the number of Arizona students seeking training in medicine. At present, the medical school committee of the Arizona Medical Association is investigating a two-year program more extensively. Present statistics would indicate adequate openings for more students in the third year classes.

In the past, undergraduate medical education was divided into a basic scientific program and a clinical program. At times these two divisions were separated geographically and in a few schools such separation still exists as in Indiana, Kansas, and the University of California in San Francisco. However, the trend in medical education is decidedly toward the integration of the clinical and basic science program. Further, faculties for the basic science programs can be attracted with greater ease if the clinical departments are also present in the same location.

It is to be noted that the major financial problem and the major administrative problems of a medical school are those related to the need for hospital facilities for the clinical departments which of course makes a two-year preclinical school a much more feasible initial step. Certainly, it makes the two-year medical school a much more logical step for Arizona at the present time. During past years there have been approximately 465 vacancies in the third-year classes in medical schools which could absorb the graduates of the two-year medical schools. However, in view of the rapidly increasing population of the Southwest and the anticipated increase in applicants for medicine, the total plan should probably include a four-year school.

Again however, it should be noted that the statement, "anticipated increase in applicants for medical training," can be quite erroneous, for within recent years the ratio between applicants and number of students accepted has dropped from a ratio of 6 to 1 to approximately 1.8 to 1. Contrary to this, is the anticipated tidal wave of students expected in our liberal arts colleges. It is predicted that the number of medical school applicants which is now 14,000, will be upped to 24,000 by 1966.

Location of the Medical School

Should not be considered at present. There are good arguments and many successful examples for locating the medical school on the university campus in a small community as the recent development of the medical school in Kentucky at Lexington, or the four-year school of Missouri at Columbia. However, numerous medical schools, such as Northwestern, Temple, and the University of Tennessee are separated widely from their respective university campuses.

Facilities

The trend in teaching laboratories is toward multi-purpose units housing up to four students instead of the single large laboratory for the entire class.

A medical school should operate its own hospital located on the university campus as an integral part of the medical center. However, clinical opportunities can be extended if the medical school will affiliate with private or municipal hospitals. The dean's committee arrangement in conjunction with the veterans' administration Hospitals is encouraged by the veterans' administration and is proving of considerable mutual benefit.

In selected fields as psychiatry, tuberculosis or malignant diseases, specialized hospitals may be developed as components of the educational program.

It is to be noted that private patients are being used increasingly in the educational program.

Relations with the Medical Profession

One of the major problems is the conflict within the medical profession and the establishment of the opportunity for the medical school faculty to see private patients. It is rare for medical schools to be able to pay salaries to the clinical faculty that are sufficiently attractive to compete with income from private practice. This has brought the medical school into direct conflict with the physicians of the community and it is essential that specific controls be developed to hold these conflicts to a minimum. The best control seems to be to select a faculty of men and women who are sincerely dedicated to a scholarly career of teaching and research. Simultaneously, it must be noted that the practicing profession has a very real contribution to make to medical students.

A basic science faculty will be greatly enhanced by an opportunity for a relationship with the biological sciences in a university program. Frequently, these basic science departments can carry a large responsibility for the educational programs in other areas of the university. There are no fixed ratios of faculty vs. students in these departments, and in a number of universities the basic science departments as biochmistry and anatomy have department heads who are not physicians. However, in the clinical departments there should be a nucleus of full-time teachers in each major department.

Should Arizona have a medical school? The opportunities of Arizona youth under the WICHE are such that top Arizona students will never have difficulty gaining admission to medical schools in many other states. However, it must be noted that students below the top level do go to medical schools and become leading physicians, which is an opportunity not presently afforded to the Arizona boy or girl.

New Mexico is actively discussing a medical school. There obviously should be free consultation between the two states regarding these developments and needs. It does not seem likely that both states should develop a medical school at the present time.

STATISTICS

1. Population of Western states census estimate, 1955.

A. California	12,961,000
B. Washington	2,607,000
C. Oregon	1,685,000
D. Colorado	1,547,000
E. Arizona	1,000,000
F. Utah	797,000
G. New Mexico	793,000
H. Montana	629,000
I. Wyoming	312,000
J. Nevada	235,000

(Phoenix, the state's largest city, is listed as the seventh largest in the West).

2. Percent increase in population in each of the Western states, 1940-1950 and 1950 to 1955.

1940 to 1950 California increased 53 per cent, Arizona 50 per cent and Nevada 45 per cent. These were the top three. From 1950 to 1955 Arizona was second only to Nevada which increased 47 per cent and Arizona 34 per cent with California dropping to 22 per cent.

3. Population and population projected; Arizona 1930 to 1975.

1930 population just in excess of 400,000. Anticipated to be approximately 2,400,000 in 1975. The question arises, will new physicians come to the state to keep up with this growth?

4. *Physician Supply*

Number of physicians per 100,000 population in each of the Western states as of 1950:

A. Colorado	171.9
B. California	154.9
C. Nevada	126.8
D. Utah	122.8
E. Washington	117.3
F. Oregon	116.7
G. Arizona	109.9
H. Montana	96.3
I. Wyoming	85
J. Idaho	80.5
K. New Mexico	77.8

The figure for the West as a whole is 137.4. The national figure is 129.1.

To date, there seems to be an adequate supply of physicians with the shortage noted only in the smaller or smallest towns.

5. Estimates of the number of practicing physicians as compared with physicians needed to maintain current physician-population ratio.

This would anticipate a need of approximately 2,500 physicians by 1975 assuming about 750 physicians were practicing in the state in 1950. However, with the 5 per cent increase in number of graduates or no increase in the number of graduates, the physician supply in the United States will not keep up with the expected increase in population and instead of Arizona obtaining 2,500 physicians by 1975, it will attain between 2,000 and 2,200. This, of course, assumes that Arizona will continue to get its same share of graduating physicians compared with the state's population as it has in the past.

6. Per capita income in the Western states, 1955.

A. Nevada	$2,434
B. California	2,271
C. Washington	1,987
D. Montana	1,844
E. Oregon	1,834
F. Colorado	1,764
G. Wyoming	1,753
H. Arizona	1,577

I. Utah 1,553
J. Idaho 1,462
K. New Mexico 1,430
(The national figure is $1,847

Arizona's per capita income increased from 1950 to 1952. Since then it has decreased.

7. Education — Median years of school completed by adults in the Western states.

A. Utah 12
B. California 11.6
C. Nevada 11.5
D. Washington 11.2
E. Wyoming 11.1
F. Idaho 11
G. Oregon 10.9
H. Colorado 10.9
I. Montana 10.2
J. Arizona 10.0
K. New Mexico 9.3

8. Medical students — Number of medical freshmen per 1 million population from each of the Western states: Average, 1950-1955.

A. Utah 80.3
B. Colorado 57.0
C. Wyoming 46.5
D. Oregon 46.5
E. Washington 43.5
F. Montana 41.8
G. Idaho 41.4
H. California 31.7
I. Arizona 31.3
J. New Mexico 21.9
K. Nevada 13.5

In the past few years, Arizona has only begun to participate in the Western Interstate Commission's contract program. In the future, it is anticipated that there will be an increase which will affect and improve this proportion.

9. Ratio of medical school applicants to acceptances from each state in the West.

A. Nevada 3.53
B. California 2.94
C. Washington 2.40
D. Montana 2.33
E. Arizona 2.23
F. Idaho 2.16
G. New Mexico 2.12
H. Utah 2.11
I. Wyoming 2.01
J. Colorado 1.97
K. Oregon 1.84

10. Ratio of applicants to acceptances assuming a 5 per cent increase in medical school enrollment in each five-year period over the previous five-year period: 1950-1975.

This would place Arizona in 1950-1955 as having approximately 2.2 applicants for each acceptance where in 1975 this ratio will have risen to approximately four applicants for each acceptance.

If the ratio of applicants to acceptances assuming no increase in medical school acceptances during the period of 1950 to 1975, this would alter the ratio instead of 2.2 applicants to one acceptance in 1950, to approximately five applicants for one acceptance by 1975.

11. Source of physicians: Per cent of those physicians now living in each of the Western states who graduated from Western medical schools:

A. Oregon 53.6
B. California 37.6
C. Colorado 37.6
D. Washington 20.5
E. Idaho 18.2
F. Utah 17.7
G. Nevada 15.5
H. Wyoming 9.9
I. Arizona 9.1
J. New Mexico 8.0
K. Montana 7.7

This would indicate that Arizona's major source of physicians is coming from M.D.s who have moved to the West from other parts of the country.

12. Medical schools in the West:

School of Medicine of the College of Medical Evangelists
Stanford University School of Medicine
University of California School of Medicine
University of California School of Medicine at Los Angeles
University of Colorado School of Medicine
University of Oregon Medical School
School of Medicine of the University of Southern California
University of Utah College of Medicine
University of Washington School of Medicine

That is, five medical schools in California, one each in Oregon, Washington, Utah and Colorado. No medical schools in Montana, Idaho, Wyoming, Nevada, Arizona, New Mexico.

NATIONAL FUND FOR MEDICAL EDUCATION

(Special Consideration for State Medical Schools)

	1 Number of Students	2 Budget Teaching	3 Income per Student	4 Tuition & Fee Income	5 Per Cent of Total Income	6 Other Inc. from Private Sources	7 Per Cent of Total Income	8 Income from Tax Sources	9 Per Cent of Total Income
Med. College of Alabama	294	$ 961,696	$ 3,271	$129,377	13%	$ 6,150	2%	$ 826,169	85%
U. of Arkansas Sch. of Medicine	314	1,849,941	5,891	127,941	7%	316,000	17%	1,406,000	76%
U. of Southern California	270	785,000	2,907	255,000	32%	480,000	61%	50,000	7%
U. of Calif. Sch. of Med., San Francisco	325	2,543,000	7,824	65,000	2%	38,000	1%	2,440,000	97%
U. of Calif. Sch. of Med., Los Angeles	165	2,436,110	14,764	56,110	3%	—	—	2,380,000	97%
U. of Colorado Sch. of Medicine	313	1,108,600	3,541	354,000	31%	37,600	4%	717,000	65%
Medical College of Georgia	351	816,160	2,325	132,000	16%	49,500	7%	634,660	77%
U. of Illinois College of Medicine	633	2,659,048	4,200	218,242	8%	26,000	2%	2,413,906	90%
Indiana U. School of Medicine	588	1,480,353	2,517	185,600	12%	635,000	5%	1,231,253	83%
State U. of Iowa College of Medicine	446	1,427,900	3,201	135,584	9%	32,000	3%	1,260,316	88%
U. of Kansas School of Medicine	428	1,939,143	4,530	180,000	9%	25,000	3%	1,934,143	88%
Louisiana State U. School of Medicine	425	1,596,617	3,756	4,000	1%	—	—	1,592,617	99%
U. of Maryland School of Medicine	376	1,103,505	2,934	283,475	25%	76,560	8%	743,490	67%
U. of Michigan Medical School	787	3,045,189	3,869	368,746	12%	484,193	15%	2,192,250	73%
U. of Minnesota Medical School	492	1,842,257	3,561	239,482	12%	119,324	8%	1,483,451	80%
U. of Nebraska College of Medicine	337	842,844	2,501	160,000	19%	25,000	3%	657,844	78%
State U. of N.Y. College of Med., NYC	587	2,700,977	6,305	423,600	15%	138,350	6%	2,139,027	79%
State U. of N.Y. College of Med., Syracuse	284	2,040,307	7,814	203,000	10%	63,700	4%	1,773,607	86%
U. of North Carolina School of Medicine	248	1,254,103	5,056	128,200	12%	125,335	10%	1,000,568	78%
Ohio State U. College of Medicine	572	2,488,744	4,350	277,225	11%	367,865	14%	1,843,654	75%
U. of Oklahoma School of Medicine	379	940,950	2,483	164,120	17%	83,924	9%	692,906	74%
U. of Oregon Medical School	297	1,186,995	3,999	150,000	12%	88,651	8%	948,344	80%
U. of Pennsylvania School of Medicine	501	2,231,634	4,454	429,414	19%	915,606	40%	886,614	41%
Medical College of South Carolina	295	1,047,750	3,551	127,950	12%	—	—	919,800	88%
U. of Tennessee College of Medicine	802	1,097,000	1,367	413,000	38%	92,000	8%	592,000	54%
U. of Texas School of Medicine	611	1,957,000	3,202	27,000	2%	150,000	7%	1,780,000	91%
U. of Utah School of Medicine	202	677,250	3,352	108,250	16%	9,000	2%	560,000	82%
U. of Vermont College of Medicine	182	774,499	4,255	161,950	20%	110,049	16%	502,500	64%
U. of Virginia School of Medicine	296	967,078	3,233	140,000	14%	130,909	13%	696,169	73%
U. of Washington School of Medicine	287	1,810,596	6,308	162,500	8%	23,407	3%	1,624,689	89%
U. of Wisconsin Medical School	321	1,219,882	3,800	102,030	8%	—	—	1,117,852	92%
Basic Science Two Year Schools									
U. of Mississippi School of Medicine	167	798,156	4,810	85,800	10%	24,500	4%	687,856	86%
U. of Missouri School of Medicine	116	999,000	8,612	21,000	2%	10,000	1%	968,000	97%
Dartmouth Medical School	48	192,342	4,007	34,534	18%	152,808	80%	5,000	2%
U. of North Dakota School of Medicine	78	368,000	4,718	4,500	1%	—	—	363,500	99%
U. of South Dakota Sch. of Med. Science	71	236,200	3,326	20,220	8%	1,000	0%	214,980	92%
West Virginia U. School of Medicine	60	216,000	3,600	16,000	8%	—	—	200,000	92%

Arizona has a larger population than any of the other states in the West without medical schools, and in fact is larger than Utah which does have a medical school. The Western states having medical schools tend to have more physicians per population unit than do states without medical schools. Nevada is the only exception to this rule. It would therefore seem that Arizona is the most likely state to build a medical school, having the largest population, the most rapidly increasing population, and the most suitable metropolitan area.

The expense of training a medical student varies between the different schools that have established figures between $7,000 and $30,000 a year. It can be accepted that at least the cost will be $10,000 to $15,000 a year. The present cost to us under the Western Interstate's program is approximately $2,500 a year per medical student. This means that we could save considerably more with our present program if the remainder of the states would allow us to go along in this manner. This is a questionable assumption.

To run a medical school economically it would necessitate at least 50 students per class. At present it is questionable that Arizona could supply this number of students, even anticipating that many would study medicine who are now denied that privilege, because of their financial circumstances, and who would be able to attend a school within their state.

The University of Utah at present has a total investment of $1,262,000 in buildings, $640,000 in equipment, a total of approximately $1,900,000. This does not include hospital teaching facilities. They are attempting to establish a new medical center which will cost approximately $10 million for the essential facilities only. The annual operating expense is $670,000. It is anticipated this will be $870,000 for the 1957 to 1958 fiscal year and $970,000 for the fiscal year, 1958 to 1959. At present they have 209 students, 55 in the admitting class.

An investigation in August 1956 revealed that the University of Washington has fixed equipment and a capital investment of $8,263,000, completed with $3 million for a university hospital. They are to add to this $11 million for the second university hospital. The annual budget is $1,760,000. This does not include research grants. They admit 75 students per year and have a total student body of 300.

By comparison, the annual budget at the University of Arizona is approximately $6 million. The stated value of the buildings and grounds is $35 million. It is anticipated that a medical school construction cost would approximate one-third of the University of Arizona budget and half of the University of Arizona building fund.

In 1954, Arizona ranked ninth among the 48 states in total taxes collected per capita and definitely above average in expenditures per capita in higher education. However, it ranks 46th or third from the bottom in the financial support that the University of Arizona receives.

These statistics are relative to the potentialities of the state and the need of the area.* They do not allow for one to conclusively decide whether a medical school should be established in Arizona at the present time, or if one is to be developed, whether it should be a two- or a four-year school, or where it should be established. Certainly the problem deserves additional study.

D.W.N.

*Consideration of the establishment of a medical school demands further that this school be placed in true perspective with other needs in higher education.

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Unanimously adopted at the annual meeting of the Health Insurance Association of America May 7, 1957, in Washington, D. C.

(Editor's Note:

The above elucidates the ethical standards for insurance practice.

How does one reconcile "engage only in sales methods, promotional practices and other transactions which give primary consideration to the needs, interest and continued satisfaction of the persons insured," when industrial firms and insurance carriers are establishing "closed panel" system? There must be a free choice of the physician by the patient.)

LETTERS TO THE EDITOR

TO the Editor:

This is an entirely new venture for me. But as I sit here watching TV, my main thoughts turn to baseball.

After all, what is this great American game? It's a game that consists of safe hits, home runs, strike-outs, fouls, walks, batting averages. Sometimes an umpire is "killed" just to satisfy those throngs who are watching. They are just everyday plain Americans. Just for convenience, let us call them Big People, and Little People.

What else is on the mind of these Big People and these Little People? Politics is one thing. So, let us reminisce a bit.

In 1933, we were not much of a nation. All the banks were closed. Millions were out of work. Wheat was 30 cents a bushel. The popular song was "Brother Can You Spare a Dime?" We had been living in isolation so long we did not know there was anyone else in the world. I think there were enough chickens so that we still had one for every pot, I do not think anyone in America died of malnutrition, but we had to kill the little pigs as there was not even room for them in the stable. We struggled along under these handicaps for about eight years, and could not seem to get off the ground. All of a sudden; Bang! Pearl Harbor! Boy, did we strike out!

The Voice

About this time Mr. and Mrs. United States began to get off the ground. Butch O'Hara went to the South Pacific. Douglas MacArthur was already there. Ike Eisenhower went to the Mediterranean. Their names did not mean much then. Then, we began to hear about this man Eisenhower being in London. Preparation for the Western front. Finally on that early

morning, June 6, Ike gave the signal and the English Channel was crossed. That was a grand slam with the bases loaded.

Along about this time an "Immortal Voice" rang out over the radio. It was the voice of that one who had master-minded this whole show – the one who had the courage, the vision, the imagination, and the faith in the greatest scientists in the world, the American scientists. The Voice promised the Japanese that the most terrible instruments of destruction were about to be rained down on them from the skies, but no one knew what he meant.

Time marches on – Hiroshima! Nagasaki! The Japanese were horrified. The world was stunned.

A little man by the name of Harry Truman was now calling the plays. He started right off batting 700. We had the Truman Doctrine, the Marshall Plan, and lots of other problems; 1948 came, and this little man fooled everyone by being elected president of the United States. Then we got into the Korean war. The greatest period of prosperity that had ever occurred descended upon these United States, but things got into a terrible state in Washington. Mink coats, deep freezes.

So then, Mr. and Mrs. United States picked out this man Eisenhower to clean up the mess in Washington, and also Korea. What kind of a man is this Eisenhower? He certainly is a great soldier, and a great statesman. A politician? Well, not so hot, I guess. Why, then, is he President? If I may speak parenthetically for myself at this point, I think he is there by the grace of Almighty God, and because somebody up there loves us.

More About Ike

Ike can probably shake hands with, and call by the first name, more heads of nations than any past presidents of the United States. Particularly, he seems to know those heads of nations in the Near East, and this area has been called the "powder keg" of the world for a couple of generations. Figuratively speaking, they have been playing some baseball in that part of the world. Nothing big, mostly sandlot games.

Some more about President Eisenhower. In 1953, and again in 1957, you heard him dedicate each term to the cause of peace. He promised a balanced budget, and that you have. You asked for the truth in government, and in due time he presented the budget for 1957. Did you expect him to be a prophet? He knew the price of pork chops in 1953, but he didn't know what the price was going to be in 1957, until 1957 came along. He merely stated that this was the price for peace in 1957, and, boy, how those little people in congress have shouted. Another group of those Little People met in Washington a while back, under the auspices of the United States Chamber of Commerce. They represented the presidents, and high officials of our million and billion dollar corporations. Those little people looked over to and viewed the White House with alarm. What in the world has happened to Ike? Has he lost his mind? Is he a New Dealer in disguise?

Where Were They?

Well, now, where were these little people back there in 1933 when we started this thing from scratch? A few inherited their millions from their forefathers in the last century. A lot of them were in college about that time. Others were probably file clerks in the big corporations of which they now are at the head. Don't forget those little people have hit a lot of home runs in their own companies, and probably paid more income tax in 1956 than any similar group in the country.

Recently a man appeared on TV to talk to the world. It was Ike Eisenhower. He said:

"My friends; I wish to tell you the truth about the budget. This is the cost of peace in the year 1957. This is not 1940. We are now living in the Atomic Age. Peace is the most cherished thing to possess on the face of this earth. All other issues are mere trifles. I feel certain you understand me. Thank you."

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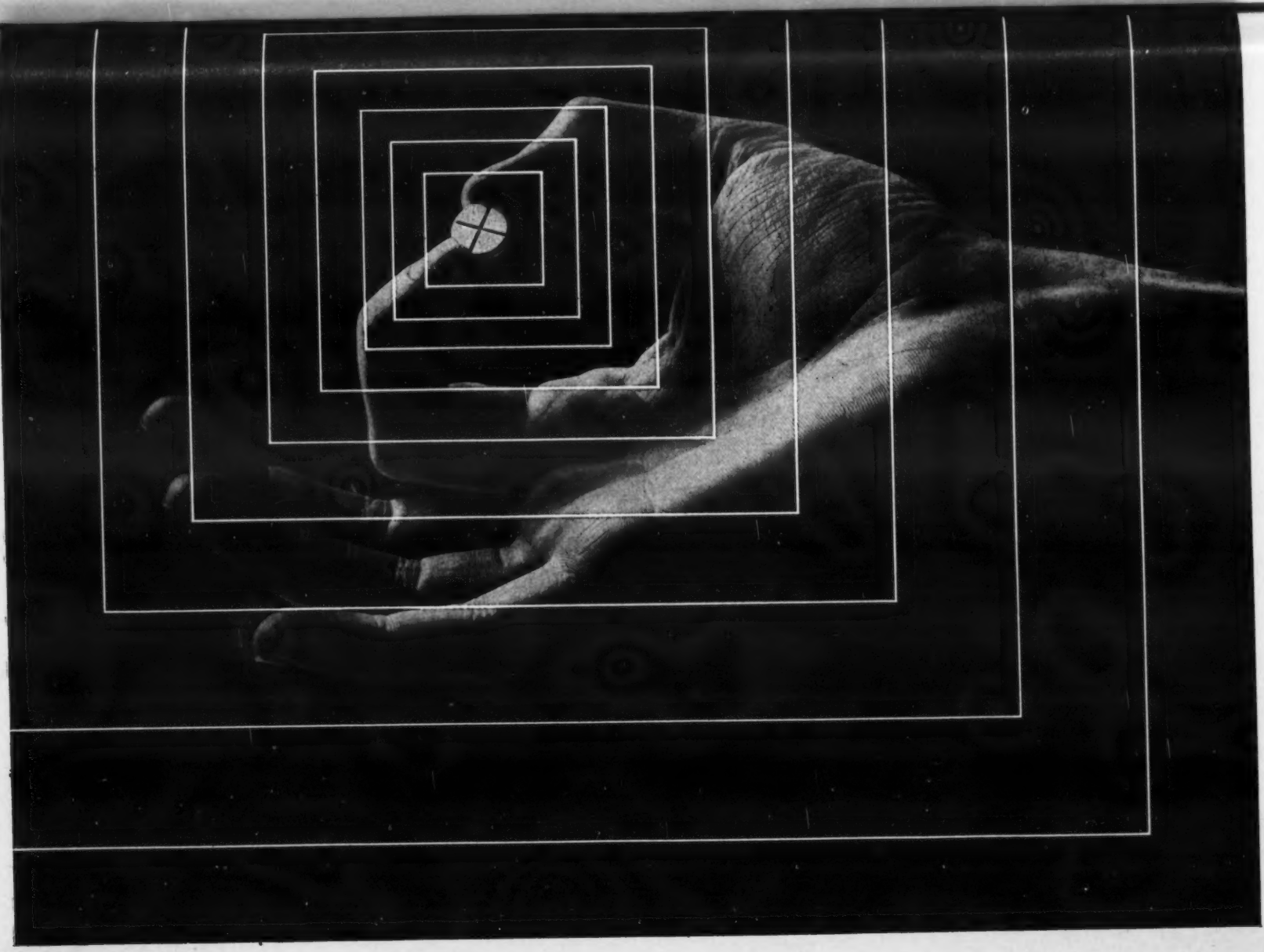

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NEW DOSAGE. The recommended adult dose is 1 Gm. (2 tablets or 4 teaspoonfuls of syrup) the first day, followed by 0.5 Gm. (1 tablet or 2 teaspoonfuls of syrup) every day thereafter, or 1 Gm. every other day for mild to moderate infections. In severe infections where prompt, high blood levels are indicated, the initial dose should be 2 Gm. followed by 0.5 Gm. every 24 hours. Dosage in children, according to weight; i.e., a 40 lb. child should receive ¼ of the adult dosage. It is recommended that these dosages not be exceeded.

TABLETS: Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxypyridazine. Bottles of 24 and 100 tablets.

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1. Nichols, R. L. and Finland, M.: *J. Clin. Med.* 49:410, 1957.

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*Reg. U. S. Pat. Off.

Topics of Current Medical Interest

PRESENT STATUS OF CHEMOTHERAPY IN TUBERCULOSIS

Report of Commtitee on Chemotherapy and Antibiotics,
American College of Chest Physicians

As in previous years, this report is not intended as a detailed treatise for chemotherapy of tuberculosis, but rather as a progress report or statement on currently accepted principles and practice to serve as a guide to the physician treating tuberculosis.

General Considerations

At this writing, there is no generally accepted optimum regimen in the chemotherapy of pulmonary tuberculosis. Streptomycin (SM), aminosalicylic (PAS), formerly para- aminosalicylic acid, USP XIV, and isoniazid (INH), are the three most commonly used drugs, but there is no unanimity of opinion as to which combination of these is most effective. However, it is emphasized that the best results are obtained when two or more drugs are combined and given continuously for a prolonged period of time. In general, it is probably unwise ever to treat a case of clinically active tuberculosis with one drug alone unless other drugs are contraindicated. Chemotherapy should be given for at least a year even in minimal cases and in advanced cases for a total of 18 to 24 months, or at least until the stage of inactive disease is reached.

In all cases of tuberculosis, efforts should be made to culture the tubercle bacilli initially and to determine drug susceptibilities. This is essential in re-treatment cases. Susceptibility studies are especially important if cultures remain positive, for changes in drug therapy may be based on changes in susceptibility.

Specific Drugs

The following drugs are useful in treating tuberculosis:

Isoniazid is a potent drug. It is effective at low concentrations, is readily absorbed, and penetrates all tissues of the body. It is easily administered and is relatively nontoxic, with good patient acceptance. The most commonly accepted dosage of INH at the present time is 4 to 5 mg. per kg. of body weight daily, in two or three divided doses. It is estimated that some individuals will have inadequate serum levels of INH as measured by bio-assay on this dosage level. Evidence is at hand that about 85 per cent of patients with new tuberculosis will do well on standard doses of INH (300 mg. per day), in combination with other effective drugs. In the other 15 per cent, particularly in patients with more advanced disease with large or multiple cavities, it is probably advisable to individualize the dosage of the drug with consideration given to higher dosage. Toxic effects of this drug, particularly peripheral neuritis, are commoner at the higher levels and pyridoxine (100 mg. per day) must be administered concurrently whenever the higher dosages are to be used. Hypersensitivity reactions may occur in the use of this drug as with streptomycin or PAS.

There are two major facts to be kept in mind in the use of INH: (1) As with most of the other effective drugs the tubercle bacilli readily becomes resistant to this drug when it is administered alone; (2) Isoniazid is degraded in human subjects into several derivatives, such as acetylisoniazid, which are biologically inactive; such inactivation varies significantly from individual to individual. Serum levels of ths drug determined by the standard chemical methods will not reveal the inactivation, but it will be evident if bio-assay methods are used.

Streptomycin and Dihydrostreptomycin continue to be among the most effective antituberculosis agents at our disposal. Each has the same therapeutic value and the dosage is the same for both. They are generally administered in a dosage of at least 1 gm, twice weekly by intramuscular injection. In this dosage streptomycin rarely causes vestibular damage and dihydrostreptomycin rarely results in deafness. In an effort to avoid these rather remote possibilities some physicians prefer a combination of streptomycin 0.5 gm. and dihydrostreptomycin 0.5 gm. In studies reported by the British Medical Research Council it was evident that, when administered in combination with daily INH, streptomycin was more effective in preventing the emergence of INH resistant organisms when

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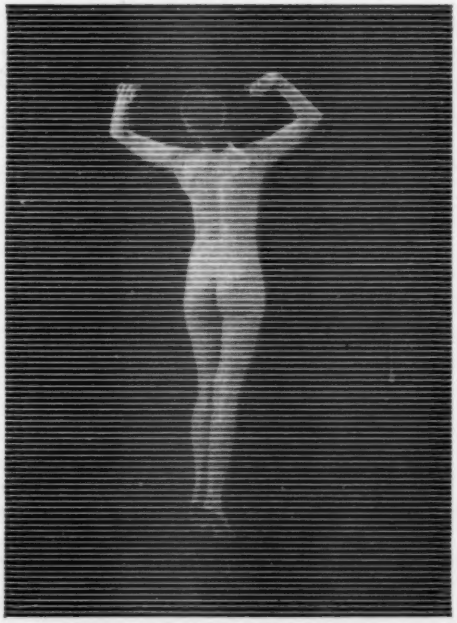

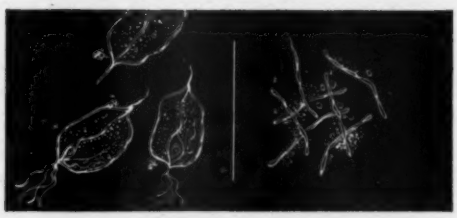

Vaginal discharge is one of the most common and most troublesome complaints met in practice. Trichomoniasis and monilial vaginitis, by far the most common causes of leukorrhea, are often the most difficult to control. Unless the normal acid secretions are restored and the protective Döderlein bacilli return, the infection usually persists.

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Method of Use

The following therapeutic procedure is suggested: One or two tablets are inserted by the patient each night and each morning; treatment is continued for four to eight weeks.

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given in daily dose of 1 gm. as compared with dose of 1 gm. twice weekly. Preliminary reports are appearing indicating that in some patients, particularly those with advanced disease, intermittent streptomycin may be less effective than daily administration of 1 gm. of this drug. It may be advisable to give streptomycin in doses of 1 gm. daily for at least 30 days to a patient severely ill on admission before reverting to intermittent therapy. Hypersensitivity to streptomycin occurs occasionally and is manifested by fever, rash and sometimes exfoliative dermatitis. In patients with less severe reactions desensitization may be accomplished by starting with a very small dose and gradually increasing; with more severe reactions desensitization may be hazardous and probably should not be attempted. Occasionally, a patient hypersensitive to streptomycin may be able to tolerate dihydrostreptomycin and vice versa.

Aminosalicylic Acid remains an important agent in the antimicrobial therapy of tuberculosis due to its ability to prevent or postpone resistance to streptomycin and INH; and to its ability to enhance the serum levels of active INH. Many forms of this drug are on the market from the acid product to sodium, potassium and calcium salts of the acid, a buffered product, and other forms. The dosage for all of these must be adjusted to the dose of the acid. In other words, 15 gm. of sodium PAS is the equivalent to 12 gm. of acid PAS. Many patients will have less gastrointestinal intolerance on some one of these products than on others. There is some difference in blood levels produced with these drugs. Sodium and potassium PAS, being rapidly absorbed, have rapid peaking and falling off of blood levels, while with other forms a more prolonged peak may be attained. The clinical significance of this is undetermined at the present time.

PAS preparations of all types, if stored too long or exposed to undue heat, light or moisture, deteriorate and discolor, resulting in increased intolerance or actual toxicity. PAS should be prepared fresh if given in solution. Under best conditions, side reactions of anorexia, nausea and diarrhea are not uncommon with all forms of PAS, but are not necessarily indications for discontinuing the drug. Occasional patients develop more severe reactions with fever, rash and rarely with severe systemic reactions simulating infectious mononucleosis.

PAS alone is relatively not very effective as a treatment for tuberculosis and should always be used in combined therapy. It has been shown recently that PAS, when administered concurrently with INH, will enhance the level of free INH in the serum of patients who rapidly inactivate INH. In Europe, intravenous PAS is being used extensively and claims have been made for its value by this route.

The standard dose of PAS in this country is 12 gm. daily in three divided doses, although some studies have indicated that smaller doses of the active substance may well be useful, particularly if full dosage is not tolerated.

Viomycin has a useful though rather limited place in the treatment of the patient whose organisms are resistant to isoniazid and streptomycin and for whom an umbrella is desirable for resectional surgery. The usual dosage is 2 gm. (IM) twice weekly for two or three weeks before surgery and eight to 10 weeks or more postoperatively. When feasible, it should be combined with another drug to which the organisms are sensitive. Renal toxicity precludes the daily use of this drug, but is less evident when used twice weekly.

Pyrazinamide (PZA) is now undergoing clinical investigation by the veterans' administration – armed forces group, the USPHS group, and others, particularly in combinations with isoniazid. It has been found to be effective in combination with INH when administered to patients who have never received either drug before. There is some evidence that this drug may be effective for short periods of 30 to 60 days when used alone, particularly to cover resectional surgery in patients resistant to the other major drugs. In most studies reported, there has been a significant factor of toxic effect on the liver; approximately 10 per cent of the patients receiving pyrazinamide have shown abnormal results in liver function studies and about 3 per cent have shown frank jaundice. When this drug is administered, liver function studies should be done periodically to estimate any liver toxicity. Most of the toxic conditions resulting from the use of this drug, however, revert to normal when the drug is withdrawn. PZA should be discontinued promptly if significant disturbance in liver function is noted and invariably if jaundice appears. At the present time, due to severe toxicity of the drug, it should be administered only to patients in the hospital.

This drug is ordinarily administered in dosage of from 30 to 40 mg. per kg., orally administering no more than 3 gm. daily. Hyperuricemia has been reported in conjunction with the use of PZA.

Cycloserine is a relatively new antibiotic under investigation for use in the treatment of tuberculosis. Preliminary studies have shown that this drug used alone is not as effective in the treatment of tuberculosis as are the various combined drug regimens now in use. At present, studies are in progress to determine the effectiveness of this drug when used in combinations with INH. Reports of toxicity, particularly to the nervous system, have continued such as tremors, drowsiness, convulsions and psychoses. Most investigators originally used this drug in dosage of 1 gm. daily, orally, in divided doses. Newer studies indicate a maintenance of therapeutic effectiveness and nearly complete absence of toxicity when administered in doses of 0.25 gm. twice daily in combination with isoniazid.

Recommended Regimens: Though there is no generally accepted optimum chemotherapy regimen, for pulmonary tuberculosis at the present time recent reports of the veterans' administration – armed forces group and of U. S. Public Health Service-sponsored studies indicate that the following regimens give approximately the same clinical results in most cases of tuberculosis: (1) Isoniazid, 300 mg. daily plus PAS 12 gm. daily; (2) Isoniazid 300 mg. daily plus SM 1 gm. twice weekly, and (3) Isoniazid 300 mg. daily plus SM 1 gm. twice weekly plus PAS 12 gm. daily. The veterans' administration and U. S. Public Health Service studies indicate that the regimen of streptomycin 1 gm. twice weekly and PAS 12 gm. daily is not quite the equal of the other three regimens, and that in far advanced disease with large cavities INH-PAS is superior to intermittent SM-INH.

As has been pointed out above, there is increasing evidence that the drug regimens must be individualized in certain patients, particularly in those with more advanced disease, with larger doses of INH and daily SM being administered as indicated.

Acute Miliary Tuberculosis

Isoniazid has proved to be very effective in the treatment of miliary tuberculosis with survival rates of 90 per cent and higher being reported. Any standard INH-containing combined regimen should be adequate in treating this condition, but due to the serious nature of miliary tuberculosis, many still advocate the use of triple drug therapy with higher dosages of isoniazid such as 10 mg. per kg. per day being used. The drug therapy should be continued for at least 18 months.

Tuberculous Meningitis

Reports during the past several years indicate that survival rates of 80 per cent to 90 per cent or higher are possible in tuberculous meningitis when INH, SM and PAS are administered for a minimum of 24 months. The committee suggests a dosage schedule similar to that for miliary tuberculosis. Intrathecal medication is not recommended. It is of the utmost importance to start the treatment immediately if the history, physical examination or spinal fluid findings strongly suggest a diagnosis of tuberculous meningitis. If the patient's condition does not permit oral medication, the INH and PAS may be given parenterally, initially.

Genitourinary Tuberculosis

Genitourinary tuberculosis responds very well to combined drug therapy including INH, SM and PAS in dosage as recommended for pulmonary tuberculosis. The drug should be administered for 18 to 24 months. Recent reports from the veterans' administration – armed forces study indicate that long-term therapy with INH, SM and PAS is very often definitive in such cases and the need for surgical intervention is becoming surprisingly less frequent.

Tuberculosis in Childhood

The committee recommends that all children with active primary tuberculosis should receive antimicrobial therapy. The complications such as miliary and meningeal tuberculosis which sometimes occur in primary disease have sharply declined since the advent and use of INH. Consideration should be given to the treatment of recent tuberculous converters, particularly in children under four years of age. In children with active tuberculosis, the physician should always be on the alert for the development of miliary or meningeal tuberculosis. The approximate dosages of the antituberculosis drugs for children are as follows: SM 30 to 40 mg./kg. twice weekly, INH 10 to 16 mg./kg./day and PAS 200 mg./kg./day. Children tolerate higher

dosages of INH well and administration of pyridoxin is usually not needed to prevent toxicity.

Other Forms of Tuberculosis

When the disease involves such organs and tissues as the larynx, mouth, lymph nodes, trachea, bronchi, GI tract and bone it is best treated by long term combined chemotherapy using one of the regimens recommended for pulmonary tuberculosis.

Tuberculous Pleurisy with Effusion

This condition should be treated as a case of active pulmonary tuberculosis with long term continuous combined chemotherapy for a year or more. This recommendation also applies to the so-called idiopathic pleurisy with effusion patients with a positive Mantoux even though careful studies fail to reveal presence of tubercle bacilli in the pleural fluid. Experience has shown that in such cases the etiology is usually tuberculous and should be treated as such in order to avoid reactivation later.

Steroid Therapy in Tuberculosis

The exact role of cortisone and related compounds in the management of infectious diseases is undefined. However, the greatest difference of opinion regarding the place of steroids exists in the field of tuberculosis. Some have felt that this form of therapy is always contraindicated while others have recommended its use under certain specific circumstances. Some of the tissue damage and clinical manifestations in tuberculosis are due to an exaggerated interaction between sensitized tissue and tuberculoprotein. Corticosteroids may suppress this overactive defense mechanism with a resulting decrease in the manifestations of illness. In patients seriously ill with tuberculosis of long duration, there is evidence of adrenocortical hypofunction. Steroid therapy used with concomitant antituberculosis chemotherapy often effects striking symptomatic improvement. Thus, without anticipating any change in the ultimate outcome, the use of steroids would appear to be justified, if only for its symptomatic effect, in patients hopelessly ill with advanced tuberculosis. In acute forms of tuberculosis associated with severe clinical illness, steroids may be helpful. This is especially true of miliary and meningeal tuberculosis. In the latter condition, prevention and relief of cerebrospinal fluid block has been attributed to steroids.

BED REST IN PULMONARY TUBERCULOSIS

Report of the sub-committee on Bed Rest in Pulmonary Tuberculosis

THERE has been some moderate relaxation in the strictness of the application of bed rest in the treatment of pulmonary tuberculosis since the advent of anti-tuberculosis chemotherapy, but it is generally considered as a basic requirement of therapy. This is true in spite of deliberate programs in some areas to de-emphasize the importance of bed rest for the purpose of investigation.

In discussions of the treatment of tuberculosis, the intense interest in methods of use of the various drugs has occupied the attention of the phthisiologist to such a degree that little has been said about the need of rest as a basic part of therapy. To the men in active practice of chest diseases, this need is generally understood and accepted, but to the person who casually reviews the literature, it is easy to gain an erroneous impression regarding the over-all program of tuberculosis treatment. Since an increasing amount of tuberculosis is being cared for by those not specially trained in this disease, the lack of information regarding the whole treatment picture can lead to disastrous results. It is the feeling of this committee that a strong statement should be made reaffirming the importance of bed rest and its proved value in the regimen of tuberculosis treatment and that this statement should receive the widest possible attention. It is believed that bed rest should be maintained until the lesion is stabilized, as indicated by bacteriologic, x-ray, and clinical evidence.

This committee also wishes to reaffirm the desirability of at least starting the patient's care under sanatorium conditions for the purpose of patient indoctrination, the evaluation of his clinical problem, and the initiation of the various therapies.

Sub-committee on Bed Rest in Pulmonary Tuberculosis

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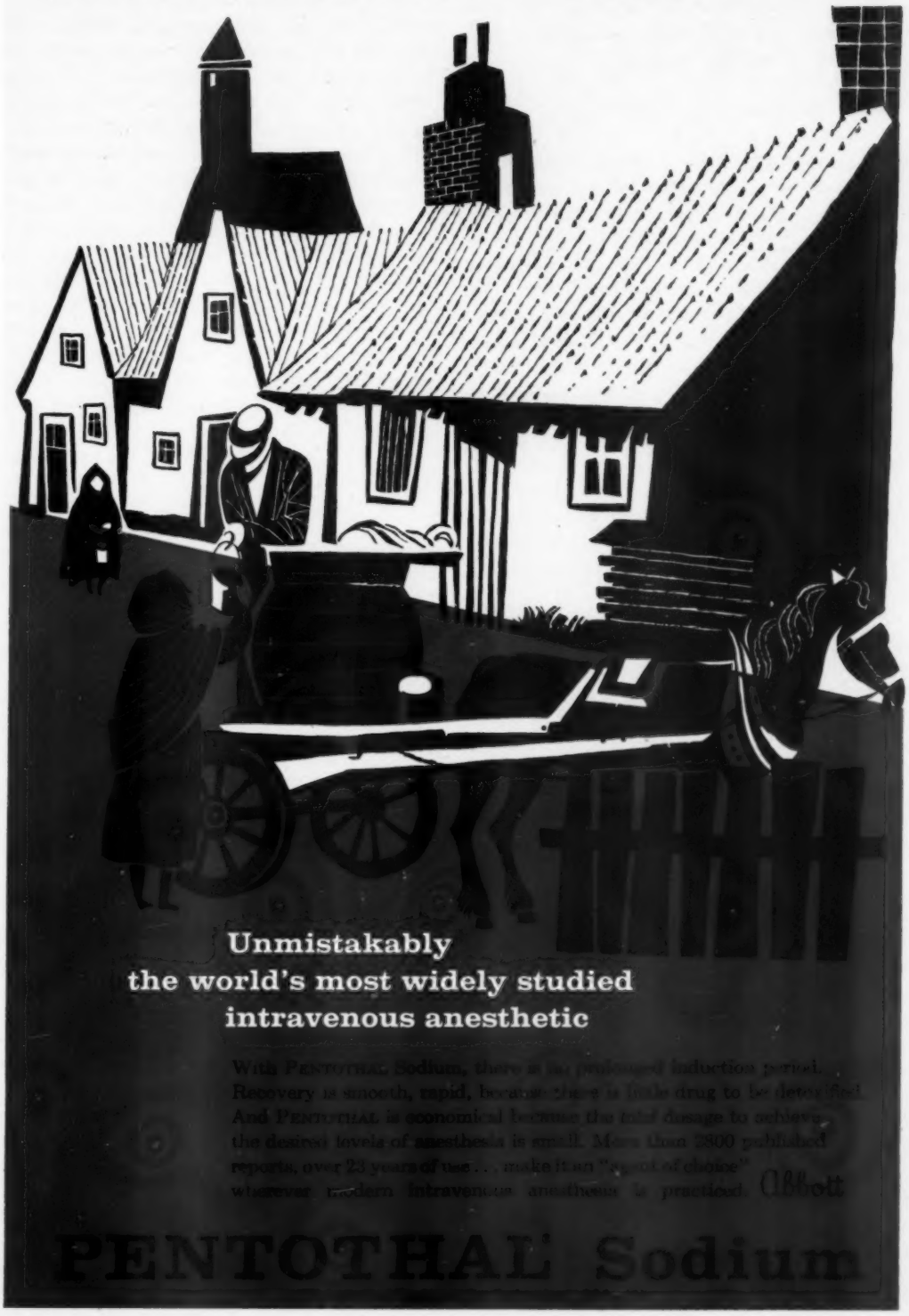

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THE PHYSICIAN LOOKS AT THE PHARMACEUTICAL MANUFACTURER — AND VICE VERSA

By Edmund R. Beckwith, Jr.*

YOU will expect me to say I am privileged to be here. You will expect me to say I am happy to be here. But you may wonder if I really mean it. The fact is that I do.

It is a rare opportunity that any of us has to reflect beyond the immediate horizons of our daily pressures. The invitation to be here has forced me into both subjective and objective reflection about our entire public health industry. Thus, I have already gained much from your generous invitation.

But I am grateful, too, for the occasion to demonstrate, I hope, that those of us who represent the pharmaceutical manufacturer are human, possessed of human wisdom and human limits of judgment, are maybe even a bit likable, and above all are continuously concerned with you and with your problems.

You as individuals may well have complaints about the operations of individual pharmaceutical companies or about them as a group. We must always be sensitive to your feelings. We must be aware of the reasons. And then we are faced with the critical problem of evaluating what these criticisms mean to us as business men.

If you will, please take special note of that word. Most people who share in the vital decisions of a pharmaceutical company are business men. True, some are physicians by training, some are physiologists, some are something else. But essentially the decisions to be made are business decisions.

If to make a profit were the only premise, our task would be a good deal more simple. But there are two important qualifications. The first is this: With no exceptions of which I am aware — if it isn't good medicine, it isn't good business either. Secondly, there is coming more and more a responsibility upon the manufacturer for activities, expenditures, and foresight in public health areas which are not directly related to the manufacture and sale of drugs. For those whose companies are international in scope, this is rapidly becoming a most pressing matter.

*President of Crookes-Barnes Laboratory. Delivered before the Medical Society of Union County, N. J. Reprinted by permission.

The hard core remains that we are in business and that the game is to make a profit this year bigger than last, and next year bigger than this. But we must do it within the context of these two profound qualifications.

Our relationships touch many groups of people: the wholesale druggist, the administrative staffs of hospitals, the government, the retail pharmacist, the physician, the patient. The most important of these, both to you and to us, is the patient.

I hope that you wil bear in mind that each of us is a prisoner of his own experience. Hence, much of what I will have to say evolves from my own firsthand knowledge of what we may do as one organization or from direct observation of what our competitors are doing. I will merely let that general qualification apply to everything from here on.

Seven Points

Because you are the funnel through which all of our activities must pass, we would be unwise, indeed, if we did not attempt continuously to understand your problems, to understand your thinking, to adjust ourselves to changes in both. There are many mechanisms available to us. Sometimes the problem is that we have too much information or that we have contradictory information, or that we don't understand the implications of what we have. We are keenly aware of many of your complaints. I have selected seven to discuss that seem most important to me:

1. Promotion is too expensive.
2. Drug prices are high and are too variable.
3. There are too many similar products.
4. Information reaches the public too soon.
5. Drugs should not be sold over the retail pharmacy counter, but only on prescription.
6. The manufacturer makes exaggerated claims.
7. Manufacturers make too much money.

Now, let's take these one at a time: One might say, "Cut down pharmaceutical promotion and lower the price to the patient." In principle, this may be right. But this assumes on one hand that less promotion would produce the same sales and on the other that those of us responsible for the promotion of drugs know far more than we do. We are still trying to find out what the relative values are and what the changing relationships are of money spent in direct

mail, or in journal advertising, or in television, or in films, or in increased numbers of pharmaceutical detailmen, or in the numbers of samples that we use, or in the form of those samples. We are learning much. Some of it is discouraging.

We know, for example, that you frequently criticize us for samples which are too small. And, let me say here that the size of our sample budgets is a matter of tremendous concern to all of us. There is waste and we know it. But we know from actual testing that despite your criticism, larger samples do not usually produce enough additional business to warrant the cost.

You criticize us for too many pieces of direct mail on the same product. And yet we are faced with demonstrations from our own testing that the quality of the direct mail is often less important than the frequency with which it is mailed.

Availability of the material is often the most important factor. You may recall the story of the chorus girl who was asked what reading material she'd prefer if marooned on a lonely island. Her answer: "A tattooed sailor."

The reading material may have been less than classic, but at least it was at hand. So goes direct mail at times.

We are disturbed that golf outings or fishing parties given by some companies increase sales of their drugs. We are distressed that the paper weight or letter opener seems to produce sales. We would be far more comfortable if so often it did not appear that methods that sell soap also sell drugs.

Two Generalities

For those of us who would like to see pharmaceutical promotion on a completely professional plane, there is still the need to face the fact that we may have actually been underpromoting useful drugs. As time goes on, our allocations of promotional expenditures become more and more precise. But, we are far from, and in my estimation may never reach, the point at which a precise formula will replace experienced judgment and, hence, some measure of error.

Before leaving this question, perhaps two generalities would be helpful. The first is the fact that even an important new drug will not be used if it is not promoted. One could go further and say that an important new drug will not be used unless the promotion is skillful. Hence, less promotion is not likely to produce the same sales effect.

The second generality is this: Lowered promotion costs would usually result in lower sales, consequently in higher per unit manufacturing costs, and virtually no saving to the patient.

Now, we often hear: "Drugs cost too much and prices vary too much." It would be wrong not to agree that in some cases this is true. The industry is vulnerable, in my opinion, because of one or two situations. Your pressure and the pressure of the patient may in time correct this. If it does, it will be a favor to us all.

In general, however, drugs are not too expensive. The average prescription price for *one-half billion* prescriptions filled last year was $2.63. Drugs, taken as a generic term, are not too expensive.

Most of the drugs for which you write prescriptions are post-World War II developments. In terms of the research expenditures behind them, they are not expensive, any more than the cost of an office visit is not expensive in terms of the money you have invested in your preparation (or education). The average annual investment for all of the principal pharmaceutical manufacturers is 5 per cent of their net sales or equivalent to about half of their net profits. In a number of cases, companies are spending 10 cents of every incoming dollar on research and figure their gambles at odds of 50 to 1.

Now, prices to the patient do vary widely. Here's an interesting example: In shopping one of our products in 48 retail stores, our first objective was to find out whether these stores dispensed the drug exactly as it was prescribed. Incidentally, they all did. For 24 tablets, which cost the pharmacist $1, the range of prices charged to the patient was from $1.10 to $2.50. The most remarkable thing is that 26 stores charged *below* a reasonable mark-up (and, incidentally, lost money on the transaction). Eighteen charged a reasonable price. Only four priced the prescription exhorbitantly. We have seen this pattern repeatedly.

Prescription prices vary for several reasons. The pharmacist is an individual professional operator. He is entitled to charge what he thinks he must to stay in business. Some pharmacists, like some manufacturers, like some physicians, are not as good business men as they

should be. The exorbitant price is probably as often a reflection of poor business practice as it is of greed.

Pots and Pans Pay

Prices vary also depending on the type of store and the location. It's a curious thing that you as physicians would like to see pharmacies of almost a completely professional character without the pots and pans, the chow mein, the luggage, the children's toys, phonograph records, and the like. However, the more nearly a store approaches what you would like it to be, the more the pharmacist is faced with employing only professional personnel and with stocking only expensive inventories that turn over less rapidly. Hence, the more the store is what you wish, the higher its prescription prices.

Let me demonstrate: The super market might buy a loaf of bread for 19 cents and charge 21 cents. This is a 10 per cent mark-up. But because of his traffic studies, this operator can estimate very closely the actual amount of bread he will sell each day in the week. And, if he doesn't sell it, the baker takes it back anyway and he doesn't have to pay for it. The next day he spends the same 19 cents for another loaf and at the end of the week he has made 12 cents on that one investment – made six times. This is rapid turnover – several times a week – at a low mark-up.

Drugs, however, stay on the shelf until you prescribe them. What's more, while the super market stocks only a few brands – only the fast-selling brands – to provide you with good service, the pharmacist carries both the drug brands you prefer, and the brands your colleague down the street prefers, even if you should prescribe an item but once a year.

The average pharmacy can count on a turnover of its stock a little less than twice a year. The average store carries about 8,000 items. The sanitary products, the cosmets, the perfumes all help to pay the overhead of electric light bills, insurance, and rent. But the professional store which does not carry such items must depend upon higher prescription prices to offset high wages and slow turnover of stock.

You are sometimes critical of "Too many similar products on the market." Unfortunately, you are more right than you know. Let's take as a starting premise the fact that you would not like to have this solved by government regulation. Then, we have got to consider this as a problem of the market place. There are too many reserpines. As a matter of fact, there may be 100. There are 88 thyroids available. There are 200 antacids in your Physician's Desk Reference. There are so many multiple vitamin products, I have no idea what the actual total is. I am reminded of the fact that when one research organization was doing studies of the vitamin market for a substantial number of clients, one of the clients remarked in exasperation: "The only people making money on vitamins are you people who measure the sales."

Last year there were about 480 new products or additional dosage forms put on the market. Less than 10 per cent of these will be commercial successes. We are all getting more cautious in each succeeding year in the introduction of new products because the odds are fantastically against their success, and because the cost is getting to be so great. A new product to us today may represent a half million to a million dollar marketing decision, and this we cannot take lightly.

Healthful Competition

This competition, however, of similar products keeps the industry healthy, allows you to change from the product of one company to that of another, and, if you will, keeps us all virtuous. This may be a wasteful system, but so is the system that has 73 medical schools competing for faculty, students and grants, and so is the system that has individual state health departments and individual municipal governments. If we did not have this kind of system, you would not have two companies battling each other for your prescriptions of a similar chemical. You would not have us embroiled in a thousand ways with our competitors. We would get soft. We would probably over-price and under-promote. Our incentive would be reduced to do research in new fields, or to improve the products we already have.

Don't misunderstand me. Even the cruel discipline of the market place will never completely resolve this problem. My thesis to you would be that the waste is worth the benefit, for year by year it forces our judgment to be more perceptive and more precise.

You charge us with "publicity that reaches the newspapers and radio, or television too soon and too spectacularly." To this we must plead

guilty. We are, as an industry, infants in the realm of publicity and public relations. Our own organization has been faced with this for a number of years and almost daily we are confronted with new problems. I was appalled to read in a national magazine not long ago a statement attributed to three physicians from one of our most respectable research centers involving a chemical with which we are intimately connected. The clinical work is so premature we don't believe it ourselves. And yet this tipped into the public domain and, incidentally, to our competitors.

We were not at fault, and frankly, I don't think the physicians involved were either. Nor am I leading up here to a condemnation of science writers, for I have a very high respect for their ability and their integrity.

The question of the public's right to medical knowledge is a difficult one. In 1923, all consumer magazines combined ran a total of 30 medical articles, 19 of them on TB. In 1953, just 30 years later, there were 299 medical articles and scientific pieces in national magazines. This kind of copy sells, not because the editors wish it that way, but because the public is insatiable.

Whereas we as manufacturers have had in the last 20 years to become accustomed to and to accept the regulations imposed upon us by the federal government, and therefore to live in a fishbowl of inspection, the physician, too, is having to become accustomed to the fishbowl of public scientific interest and knowledge.

Do we as manufacturers use these avenues to excess? Yes, I think that we are perhaps inclined to. But there is no solution for this except the individual experience of the individual manufacturer. One company made a public relations mistake five years ago — an innocent one. It was an act of good faith and naivete. Since then, this bitter mistake has cost an estimated $2 million in sales. Believe me, I doubt that organization will ever be guilty again of a similar error.

Together we must face two simple facts. One: People want scientific reading material. They will get it one way or another. All of us are better off giving them good material than leaving this to chance. Medical societies all over the country are now following this course of taking an adult public into their confidence. Two: Although it may seem cumbersome and slow to you, where a manufacturer is guilty of excess, he will eventually pay the price and he will learn his lesson.

Labeling

You frequently express strong reactions about the labeling of some products. You would prefer to see the drugs you use with a "prescription legend only." Sometimes we are faced with criticism so strong that you cease prescribing products when you discover that they may be purchased over-the-counter. Fortunately this is one spot where the answer is quite simple.

The Durham-Humphrey law, under which the food and drug administration operates, and the food and drug administration regulations make our situation quite clear. A drug which can be labeled with adequate directions which will make it safe for the layman to purchase and to use without a physician's advice *must* be labeled for over-the-counter sale. A drug which cannot be used by the layman without a physician's diagnosis and instructions, must be labeled with a prescription legend. It is the manufacturer's decision, but not his choice.

Now, an interesting aspect of this is that the decision rests with the manufacturer. This is in keeping with our American philosophy of government. The food and drug administration is not a top sergeant empowered to dictate each step a manufacturer takes. The food and drug administration is a policeman empowered to enforce the law when the law is broken. This distinction is most important.

In actual operation, we on occasion have been requested to change the legend on drugs of our manufacture to over-the-counter. When we have been requested to do so, we are in the same position as the automobile driver who is told he cannot park so close to a fire plug. He can refuse to move and later argue it out in court, or he can move.

The labeling on a product is the result of the most careful consideration as to its safety in the hands of the layman. We cannot choose the labeling for some supposed economic gain.

You accuse us of exaggerated claims. Another way of saying this, and perhaps a more kindly way from the manufacturer's point of view, is that you accuse us of basing claims on inadequate evidence. On occasion, it turns out that you are right.

Let's assume on one hand that some of us are occasionally guilty of promising performance from a drug which it can't provide. The solution is for you to register your feelings directly with the manufacturer. You would be surprised to hear how few letters physicians write expressing doubt in this area.

But there is an aspect here of considerable intellectual interest. We have become so accustomed to coming to you with reprints, abstracts, fragmentary reports of work done by physicians in research centers or medical schools, that you have been acclimatized to believe only reports of other physicians. What this really means is that you don't believe us.

The blame is on us. But the fact is that we should always have more information than appears in any one report or even in all the published reports about a drug, for by the nature of our clinical research operations, we collect hundreds of case histories in the form of personal communications and unpublished reports from other physicians.

I don't know the answer to this, but I find it intensely disturbing. I hope that in the next few years we can so conduct our businesses that we can reverse this situation. It hurts our pride to be accused of making claims based on inadequate information when actually we have far more than we are able to disclose.

This is no time for excuses, but this problem is a most intricate one. For example, just a few weeks ago there was in Washington a large meeting of clinicians, government people and manufacturers to discuss a mammoth study of tranquilizing drugs. Most important point to come out of three hard days' work: The clinicians could not suggest benchmarks which they themselves would consider valid. It is always extremely difficult to establish firm criteria and to get any two physicians to deal with a clinical problem in exactly the same way. And, of course, it is sometimes nearly impossible to say at the outset what it is precisely that one is searching for, or else it wouldn't be searching.

Matter of Pride

Despite the difficulties, it hurts our pride to be in a position in which you don't believe us. And whether we can ever get to the position where you feel that if company A says something, it must be right, or if company B says something, it can't possibly be otherwise, then we will have accomplished a great deal. This will come about possibly if you continue to distinguish between those companies whose words you trust and those you don't. I think it would be well if more and more you drew this distinction, and if you registered your complaints directly and forcefully.

Now this is possibly the touchiest of all subjects: You say we are making too much money. In some cases — in some years — this is true. However, the bonanza years of a few companies tend to obscure the general picture.

Let's assume for the moment that a given company introduces a new drug. The preparation may be such a departure from previous therapeutic items that it will take two or three years for competitors to catch up. Even such a drug will not begin rapidly, but by the second year will be selling in very high volume. By the third, it may be truly of magnificent proportions.

The company fortunate enough to find such a drug will normally expand its promotional effort, its manufacturing effort, and its research effort. But it would be most unwise to expand more than a limited amount in relation to the climb of sales. One would be foolish to take on fixed expenditures when the likelihood is that not more than one, or two, or three bonanza years can be counted on. This does not mean that in those years the profits of that one company are too high when regarded as a percentage of sales.

There is another factor also. In some cases, sheer good management of a business has created a profit structure which becomes a bear by the tail. One company I know of, by the change of its distribution policies has dramatically changed its profit structure. Four years ago, it cost that company $1,150,000 for all of the processes involved in receiving an order, editing it, tabulating, packing, shipping and collecting. It cost this much when the sales volume was $10 million. Three years later when the sales volume had risen to $20 million, the cost for these same functions had been reduced to $850,000. To me, this is another way of saying that skillful management of its distribution had increased the net profit on $20 million of sales by $1.5 million before taxes. Others have since 1950 dramatically affected their profits

by the same kind of management.

Now, what can be done? Lower the prices of all products in the line? Possibly. Invest more heavily for the future in terms of promotion and research? This is a better solution. But then there are limits to how much money one can invest wisely. Frankly, on a $2 million research budget, one could not quickly add $1 million without tremendous waste. Expansion must be built slowly.

If one cuts prices, *the means for investment* in the future are removed. If one builds slowly, two or three years of unusual profits result.

This is the problem, but in any one year it exists for only a handful of individual companies. For all but a few of the 200 companies in the industry, the normal year will show moderate net figures at the end of the calendar. Our biggest manufacturers in other industries make 15 per cent after taxes. Many manufacturing companies do as well or do better. A pharmaceutical company which annually gambles from five to 10 per cent of its sales dollar on research is certainly entitled to do as well if it can.

Now, there are many other problems that irritate you. You will notice that I have not even mentioned the detailman. I have not mentioned the problem of the names of drugs. I have not mentioned the fact that sometimes we fall prey to what looks like good consumer advertising, but which has little relationship to the clinical problem. There are many other points, but these seven I think are the critical ones.

There are no easy solutions. A great deal of the trouble stems from the fact that we, too, are human and that despite the scientific attitudes with which we approach our clinical problems and our marketing problems, the fundamental is still one of human judgment. In this area, perfection is simply too much to ask.

It is a pleasure to be with you. I hope that at least one factor has shown through and that is that we are acutely sensitive to your wishes, to your feelings, and to what we hope will be useful to you in the care of the patient. I would come back to one solid axiom: For most of us in the industry, if it isn't god medicine, it isn't good business. And while we are business men engaged in the pursuit of expanded sales and expanded profits, we are guided by the care of the patient as the most important fundamental of all.

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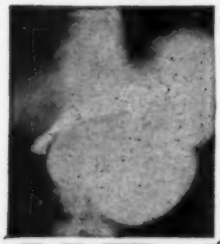

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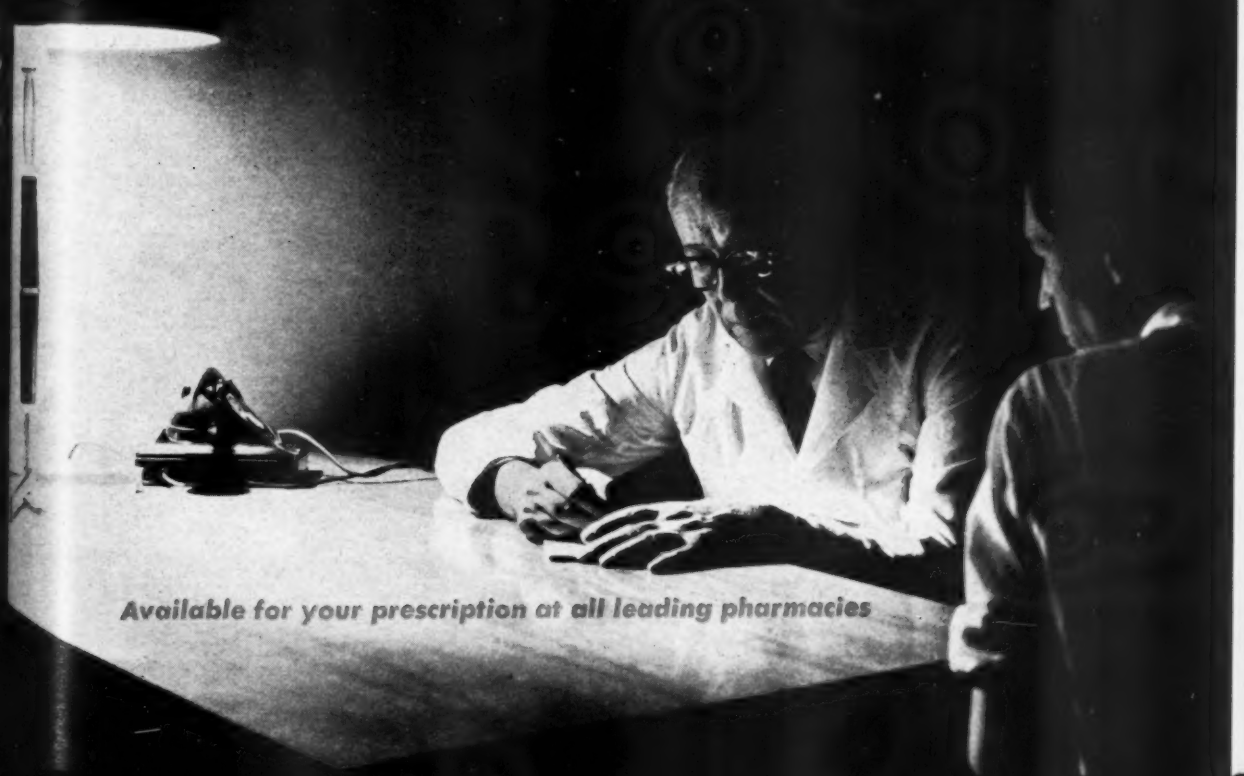

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REPORT OF SUBCOMMITTEE ON INSURANCE MEDICAL FEE EQUALIZATION

THE medical societies are having increasing demands to bargain over fee schedules. The federal government with Medicare for the armed forces dependents, the state government with industrial coverage, and now the many competing private insurance companies as well are asking for some uniform fee schedule plan. The physicians' own plan, the Blue Shield, already has a fee schedule. To have a uniform fee schedule for all plans would eliminate long hours of work by the society members. The society should therefore consider having a uniform fee schedule with possibly a single bargaining committee. The fee schedule could be adjusted to the cost-of-living index and changed with the rise and fall of the cost of living. In 1948 the automobile unions adjusted their wage scale to the cost of living with a one cent adjustment for changes of 1.14 points. By 1959 over eight million workers in various industries will have such salary coverage. Congress uses this index as a guide to federal wage scales. It is suggested that possibly every two years the fees be re-evaluated and if the cost of living has gone up more than five points, the fee schedule should be raised to keep the doctors' fees running on a parallel curve with the cost-of-living index. This bargaining committee could conceivably consider special lower income groups and possibly charge them some fraction of the agreed upon fee schedule provided payment for care comes directly from the concurred group. The same bargaining committee could hear requests for raising and lowering fee schedules and the addition of new fees for new operations and procedures as they are developed in the medical profession. Finally a single committee could gain great experience in bargaining with various groups. Some lay personnel could add to the committee effort by gathering information on a part-time basis.

Other federal employee groups desire the same Medicare program as provided for the armed forces personnel. It is said that the postal workers are at this time requesting such coverage. At the present time the federal government and the state of New York are reportedly considering ways and means of broadening the coverage of government employees through the use of existing volunteer health insurance plans. The potential coverage here is enormous. If this spreads to other states, it is easy to see that a vast number of people in public employment will eventually be covered by some form of health insurance. Recent newspaper stories from England remind us that the English physician was verbally promised a cost-of-living fee schedule increase, but this was subsequently denied him by the government. Most of the doctors who have been canvassed by this committee feel that the present Medicare fee schedule is adequate or more than adequate. The great question is whether in five years this same remark can be true. We should plan ahead of these trends to protect ourselves. Already the armed forces are trying to have state organizations explain why fee schedules vary for the same procedure. This is an indirect drive toward a nationwide fee schedule and if allowed, we will have the American Medical Association bargaining for all the states.

Hope For Adoption

The Arizona State Industrial Commission has been asked to recognize the relative value (fee) schedule adopted for Medicare by the armed forces and in some measure they have adopted this fee schedule. It is hoped that in the future they will adopt it in its entirety. It would be much more desirable, in any event, to adjust this fee schedule also to the cost of living so that great bargaining hassles can be avoided with the industrial commission in the future. The commission's payments for hospital care have increased much more rapidly than professional fees to the doctors. The same economic factors that raise hospital fees are in operation in the doctor's office. We should plan to protect ourselves from this increase in operating expense in caring for government and insurance protected groups.

Representatives from private insurance companies claim that they are being held back in their competition with the federal and state insurance plans by their need for some uniform fee schedule. Even if we could agree to give them the same schedule given the federal and state governments they would be in a competing

position. Anderson and Feldman, in a recent review, report that private insurance companies nationwide are exceeding the Blue Cross enrollment and appear to be increasing at even a faster rate. This has occurred because the private insurance company underwrites two times as many people on an individual basis as the Blue Cross and Blue Shield in hospital and surgical coverage.

Finally, the Blue Shield plan in our own state points out the need for changes in the fee schedule adjusted to the rising income and cost of living. We, at the present time, have several fee schedules in the Blue Shield pointing up the fact that the earnings of the subscriber have gone up tremendously since the plan was initiated. A recent analysis of the Massachusetts Blue Shield plan appeared on the editorial page of the New England Journal of Medicine with interesting figures in this respect. When their Blue Shield program was initiated, an income of $2,500 was set as a ceiling. At the time, between 1935 and 1939, this plan was initiated, 91 per cent of the wage earning groups had a family income of less than $2,500 yearly. At the present time 60 per cent of the families enjoy an income of between $3,000 and $15,000. Only nine per cent have $3,000 or less yearly income. The average family income which was $2,340 in 1930, had risen to $5,520 in 1955. This is an increase of 136 per cent. The cost of living over a similar period increased about 90 per cent. The editorial further advocated a new fee schedule with cost-of-living raises in the future.

288 *Million Policyholders*

We are told that now about 80 per cent of the people admitted to local hospitals have insurance coverage of some type. Some additional statistics on a nationwide basis along this line might be interesting. The insurance coverage for patients admitted to the hospital since 1941 has increased tenfold. The surgical expense protection has increased 18 times. Since 1945, medical expense insurance has increased 14 times. Estimates by the Health Insurance Council disclose that in May 1957, 118 million people were covered by hospitalization insurance, 103 million were covered for surgical expenses, and 67 million for medical expenses. I think most of us would like to see an even greater number of our patients covered by some type of insurance program. All of us would agree that it is far better to have this done by private insurance companies than by the federal government.

This committee should consider attaching some type of cost-of-living clause agreements to all of our insurance plans. We will certainly expect and plan to take a smaller fee if depressions come and by the same token, we should expect a larger fee schedule in times of inflation. We have, in principle, established a fee schedule when we set a fee schedule for Medicare, as well as Blue Shield and the industrial commission. I think we should go one step further and set a fee schedule that allows private insurance companies to compete with governmental insurance plans on an equal basis.

All of our schedules with Medicare, Blue Shield and the industrial commission, as well as arrangements with private insurance companies, would have inserted a clause, for our protection, based upon the cost-of-living index. No one knows what the future holds, but all of these plans are still fluid. It may not remain so indefinitely. Active efforts are being made by private insurance companies to create plans to meet the peoples' needs and we should consider means of modifying those plans to meet our needs. These companies are now asking for co-operation. A cost-of-living index clause might be contracted for over a specified period of years, for example, 10 years. In this fashion, our state society could serve as a "pilot study" medium for the rest of the country. In addition, we would have the opportunity to decide whether wo would like to continue such a plan in the future.

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SOCIAL SECURITY AMENDMENTS OF 1958

J. D. Hamer, M.D.

Introduced: Aug. 27, 1957. HR 9467.

Committee: Ways and Means of the House of Representatives.

Purpose: To amend the Social Security Act to increase benefits under the old-age, survivors, and disability insurance programs, and to provide insurance against hospital and surgical services for persons eligible for retirement benefits.

Provisions: This bill contains three major revisions of the present Social Security Act. It would: (1) initiate hospital, nursing care and surgical payments for persons eligible for retirement or survivorship benefits under OASI; (2) increase the earnings formula under which persons would be taxed up to the first $6,000 of earnings (present limit is $4,200); and (3) increase dollar benefits payable to workers, their dependents, and survivors. The author estimates that under this proposal 12 *or* 13 *million* persons could receive medical protection payments in *the first year.*

The author stated on the floor of the house following the bill's introduction – "I am grateful that President George Meany of the AFL-CIO has endorsed my proposed amendments as necessary, sound and enlightened."

Those eligible for such benefits include persons receiving OASI benefits or *persons eligible* for such benefits; this includes both the retired workers and any of their beneficiaries and survivors, but not those entitled to disability benefits.

The proposed medical benefits would pay the cost of hospital care for 60 days in any year in semi-private accommodations and nursing home care up to a combined total of 120 days in a 12-month period. Financed also would be the cost of necessary surgical care (not elective surgery) with freedom to choose a surgeon of the beneficiary's choice, provided the surgeon is certified by the Board of Surgery (American Board of Surgery), or is a member of the American College of Surgeons, (except in cases of emergency.) (One wonders how the members of the American Academy of General Practice will like that provision?), except those who may be certified also by the above specialty boards.

For oral surgery the patient would also be priviliged to select a duly licensed dentist of his choice.

Hospital care could be received only in those hospitals which had entered into an agreement for payment with the government. Eligible nursing homes would be only those where skilled nursing care could be obtained and which were operated in connection with a hospital or in which nursing care and medical services are prescribed by, or performed under the general direction of, persons licensed to practice medicine or surgery in the state. Necessary minor surgery or surgery in case of emergency would be permitted in a doctor's office.

Physicians would be paid in such amounts as prescribed in regulations promulgated by the secretary of HEW. Agreements with hospitals would be made with any such institution other than a tuberculosis or mental hospital, provided it is licensed as a hospital or nursing home pursuant to the law of the state in which it is located. Such institutions would not receive payment if payment were due under a workmen's compensation law or plan of any state or the United States. In the event that the OASI trust fund would pay for hospital and other medical services and where, subsequently, it is determined a workmen's compensation or other state or federal plan is liable for such expenses, then the United States would be subrogated to all rights of the beneficiary or the provider of services to whom payment has already been made.

The secretary of HEW could utilize the services of private nonprofit organizations which: (a) represent qualified providers of hospital, nurse-home, or surgical services; or, (b) operate voluntary health insurance plans. These nonprofit groups could be utilized as fiscal agents; but only to the extent that the secretary of HEW "can make satisfactory arrangements with them and to the extent he determines that such utilization will contribute to the effective and economical administration of this section."

A national advisory health council would consult with the secretary of HEW. The council would consist of the commissioner of social security, who would serve as chairman ex officio, and eight members appointed by the secretary (four persons outstanding in the field pertaining to hospital and health activities, and the other four members to represent the consumers

of hospital, nurse-home and surgical services.)

The medical benefits under this proposal would be in addition to the dollar retirement or survivor payments already provided for in the social security law. For example a retired worker requiring a 20-day hospitalization and 100 days of nurse-home care in a 12-month period could, during all of that continuous stay, receive his bed, board and complete medical and subsistence care and still continue to receive up to a maximum retirement payment of $151.80 per month.

This bill would increase cash monthly benefits across the board. For instance, future beneficiaries' maximum individual monthly benefits would become $151.80 instead of $108.50. Family benefits would be increased so that the maximum monthly benefits could reach $305, instead of the present $200.

To finance the cost of this entire proposal, including these additional medical benefits, the bill would increase the base on which wage-earners are taxed from the present $4,000 to $6,000. In addition, it would increase the present rates of contribution of employees and employers by half of one per cent each in *1959*, and the *self employed* would pay three-fourths of one per cent *more* based upon the proposed $6,000 annual maximum. By 1975, the rate of tax outlined in this bill for employees would be 4.75 per cent and the like tax would be imposed on their employers for a total of 9.5 per cent of wages up to $6,000 annually. For the self-employed persons, the tax would be equal to 7⅛ on the first $6,000 of self employment income (the maximum payment would be $427.50 annually), and so on higher and higher taxation beyond 1975.

A one per cent increase in the tax rate as here proposed would yield the social security trust fund approximately $2 billion. Apparently, the author estimated the average cost for each of the approximately 13 million persons who would benefit by the proposed health care amendment would be about $150 annually. To multiply that amount by the number of persons to be benefited would result in a total of approximately $2 billion annually also. In raising the tax base from $4,200 to $6,000, the author proposes to raise sufficient funds to finance the increases in dollar payments for retirement benefits; therefore, the rate increase would be assigned solely to finance the hospitalization and surgical benefits.

MEDICAL CARE OF THE INDIGENT

IN the old days, now all but forgotten, public assistance probably was not too efficient and sometimes it was erratic. But it was a simple operation. The local community was expected to take care of the food, clothing and housing needs of its own poor. The doctors and the hospitals undertook to give them medical care for nothing, or at most for a token charge. The doctors were little concerned about the political ramifications of public assistance, nor were others who helped out the indigent families.

Over the years the picture has changed vastly. In 1936 the federal government started passing out money to the states with the stipulation that the states add money of their own and use it to support certain categories of the indigent. Since that time, the U. S. contribution for public assistance has increased about 700 per cent. With this growth in public assistance payments, there has been, particularly since 1950, a parallel growth in public payments for the *medical care* of the indigent. At present, public assistance money intended for medical care – for physicians, hospitals, nurses, dentists, druggists – probably totals well over half a billion dollars a year, when state, federal and local contributions are all considered. This phenomenal medical-social-economic-political development is having and will have repercussions on medical practice, for good or bad. The American Medical Association, through studies over the years, has established principles covering medical care of the indigent. The council on medical service has been concerned with the problem, and has kept in close touch with developments through studies and conferences with the federal officials involved. For further information in this field write to the council at AMA, Chicago headquarters.

THOMAS H. ALPIN, M.D.

DOCTOR FEES BELOW OTHER HEALTH COSTS

A REPORT in the Monthly Labor Review on medical care costs in the cost of living index notes that in the past 20 years hospital costs have risen sharply in contrast to physicians' fees. The article by a bureau of labor statistics employee lists these increases between 1936 and 1956: hospital room rates, 264.8 per cent; dentists' fees, 82.1 per cent; general practitioners' fees, 72.8 per cent, and surgeons' fees, 59.5 per cent. In the same period, medical care costs generally have lagged behind costs for food, personal care other than medical and clothing. The report makes this observation: "With the higher level of living attained in 1950, relative expenditures for medical care tended to increase as incomes increased, as is usually true of items considered as 'necessities' in the family budget. The fact that this pattern has begun to appear in the spending of workers' families indicates the high order of importance they place on medical care. . . ."

THE EDUCATIONAL COUNCIL FOR FOREIGN MEDICAL GRADUATES

By Elmer W. Schnoor, M.D.
Member, Executive Committee Educational Council for Foreign Medical Graduates
President, State Board of Registration in Medicine, State of Michigan

THE Federation of State Medical Boards of the United States is an organization of state medical examing boards interested in the educational competence of medical school graduates preparing to enter the medical profession. These examining boards are all legally constituted under practice acts as enacted by state legislatures to promote the best interests of the public in the field of medical licensure with emphasis on educational standards. All boards stress minimum education and medical training for competency of medical practice. Licensure to practice is a means of public protection and assures a specific amount of educational attainment and fulfillment of state practice act legal requirements.

The medical profession and its associated groups are concerned with medical care and are continually striving to maintain the highest type of medical service for the welfare and benefit of our people.

Progress in medical education in the United States is developed and advanced by co-operation of the American Medical Association, Association of American Medical Colleges, the Federation of State Medical Examining Boards, and the Association of American Hospitals.

Progress of post-graduate continuing education in our country in the past 10 years has taken a remarkable change. The former methods of obtaining post-graduate education are gradually disappearing and being supplanted by superior methods in approved teaching hospitals with advanced types of internships, specialized residencies and growing research activities. Medical schools, teaching hospitals and the medical profession have become more closely allied in medical progress than in any previous era of medicine.

Recent devastating wars have resulted in marked deterioration of foreign medical education standards. Superior educational opportunities in the United States in conjunction with recent political and social events have caused the state department to permit entrance of large numbers of foreign-trained physicians to the United States. Proper evidence of educational attainment in medicine of these foreign medical graduates whether for licensure or for post-graduate study in the United States hospitals is difficult to obtain.

The Council of Medical Education and Hospitals and the Federation of State Boards met in Washington, D. C., in April 1954, with 22 different educational organizations interested in medical education for an all-day discussion of the foreign medical graduate problem. In this meeting, the federation revealed that one state in its organization had developed, since 1951, a screening examination process for evoluation of each individual foreign medical graduate applicant meeting acceptable minimum education standards. In concluding this meeting, Dr. Weiskotten, chairman, voiced the challenge of future procedure suggestions be placed in the hands of the Federation of State Medical Boards of the United States.

Screening Needed

The state department, like the Federation of State Medical Boards and the Council of Edu-

cation and Hospitals of the American Medical Association has become concerned, as the general level of medical education of foreign medical graduates is considerably lower than in the United States. The appointment of students from such countries could very well adversely affect medical service in the United States hospitals where such foreign medical graduates would seek education, with unfortunate results not only to our medical profession, but also to the exchange program.

Hospitals in the United States which accept foreign medical graduates have not had available any adequate means for determining the medical qualifications of these emigres whether on permanent or temporary visa for education in the United States. Many of these foreign graduates have come to the United States at the invitation of these hospitals, since they are desperately in need of interns or residents.

The American medical profession and interested groups in health and welfare have a definite responsibility to uphold our standards and also prevent discrimination against our own medical graduates. The listing of some 50 foreign medical schools after examination by the Council on Medical Education and Hospitals, since 1950, to be considered on a comparable educational basis with our own approved schools, became inadequate as numbers of foreign graduates came from many of the other 500 medical schools in 84 countries.

The federation groop, after many meeting and discussions with the council on education and hospitals, the Association of American Medical Colleges and the Association of American Hospitals, aided in the formation of the Co-operating Committee on Graduates of Foreign Medical Schools following presentation of its purpose to the board of trustees of the American Medical Association in San Francisco and again in Miami and Atlantic City.

The following principles were adopted after sanction by parent bodies of members of the co-operating committee to give guidance for the objective in future considerations and debate at its meetings:

1. Although the responsibility to share educational opportunities in medicine is recognized, the primary concern must be for the health care of the American public. Thus, before assuming responsibility for the care of patients as interns or residents, all graduates of foreign medical schools (immigrants, exchange students, and American graduates of foreign medical schools) should give evidence, as nearly as can be measured, of having reached a level of educational attainment comparable to that of students in American schools at the time of graduation.

2. The primary objective of this committee is to devise an effective mechanism for measuring educational attainment in the absence of intimate and continuing knowledge of the educational background of foreign-trained physicians seeking position as interns or residents. It should not interfere with the hospital's privilege of making its own selection among qualified physicians. It should not serve as a substitute for, or interfere with the normal licensure procedures of the various state boards, although the program may be helpful to the boards.

3. It is not intended that this mechanism be applicable to those foreign medical school graduates in the United States as temporary students participating in programs of medical and related studies in recognized universities, medical schools, and postgraduate schools, who by the very nature of their study are not involved in the responsibility of patient care.

It is the belief of the co-operating committee that implementation of its proposed program will afford hospitals needed assurance in regard to the medical qualifications of foreign-trained physicians seeking positions as interns and residents. This program represents an extension of foreign graduates on the same principle that has proved its value and long been in effect for American graduates.

Proposed Program

The emphasis in this program is placed on evaluating the medical qualifications of the individual foreign-trained physician who wishes to come to the United States, rather than attempting to evaluate on a continuing basis the educational programs of the hundreds of foreign medical schools that serve as potential sources of these foreign-trained physicians.

The program is designed to establish two principal criteria in regard to each such foreign-trained physician: (1) that he is a graduate of a bona fide medical school and (2) that, as nearly as can be measured, he has reached a level of educational attainment comparable to that of students in American schools at the time of graduation. These criteria are to be established

by evaluation of the foreign-trained physician's medical credentials in view of predetermined minimal standards and by examination of the foreign-trained physician for factual knowledge of medicine.

Evaluation of Medical Credentials

The basic requirements listed below must be met in order for the foreign-trained physician's credentials to be considered satisfactory. As evidence of fulfillment of these requirements, the candidate should present medical credentials in original form with an acceptable English translation. These credentials, together with the bona fide status of the medical school, should be verified by the American consul in the country in which the school of graduation is located.

Basic Requirements

1. A minimum of 18 years of total formal education.

2. Included in this minimum of 18 years of total formal education should be a minimum of 32 months of attendance and direct study of medicine, excluding any time devoted to what in the United States would be considered as premedical study or internship.

3. In any country where the minimum standards stated above do not constitute sufficient educational achievement to acquire licensure in that country, the latter rather than the minimum previously described would be required. Although it would be expected that licensure would be achieved in the country in which is located the school of graduation, under exceptional circumstances such licensure would not be demanded if the candidate had fulfilled all of the educational requirements for licensure.

4. Evidence of satisfactory completion of the above-described courses of study.

5. As evidence of acceptable moral and ethical behavior, each candidate must present a properly executed affidavit that he has not been convicted of any crime involving moral turpitude and that he has never been censored or had other punitive action taken against him by any recognized medical body including licensing agencies for reasons of immoral conduct.

Examination for Factual Knowledge in Medicine

The objectives that this program is designed to fulfill dictated certain factors that had to be considered in determining the nature of the examination.

1. An acceptable examination must be a valid test of the foreign physician's knowledge in medicine. The examination must also give sufficient insight into the applicant's ability to approach rationally a clinical problem and follow it through to a logical conclusion as the result of application of basic medical concepts rather than empiric knowledge.

2. Since applicants to this evaluation service are to be measured in comparison to the performance of graduates of American medical schools, the examination must lend itself to such a comparison.

3. If this program is widely accepted, as the committee is confident it will be, foreign-trained physicians seeking further training in the United States will not be able to find positions offering such experience until they have successfully completed all phases of the program. Those physicians seeking further training in the United States cannot obtain a student visa until they have already received a position offering this additional training. It, therefore, is necessary that the examination be conducted abroad as well as in the United States. Under these circumstances it is then also most advisible that the administration of the examination require minimal supervision.

4. The costs of preparation and administration of the examination must not be prohibitive.

On the basis of advice from consultants experienced in educational testing, the co-operating committee concluded that an objective-type examination of approximately 400 properly selected test items would provide for purposes of this program a valid measure of medical knowledge. A significant number of these items should consist of case presentations with multiple questions based on them to determine the applicant's ability to interpret symptoms, signs and basic laboratory data in arriving at accurate diagnosis and rational therapy. Such an examination could be given in a single day, divided into a morning and afternoon session.

Utilization of the objective multiple-choice examination presents many advantages. Perhaps most important among these for the purpose of this program is that such an examination lends itself to rapid, accurate, impartial machine scoring and thorough statistical analysis, thus providing a sound basis for many comparative studies. Another important advantage of this type of testing is that the administration of it is not

complex and only minimal supervision is necessary so that it could be given abroad.

One of the important problems that has been encountered with graduates of foreign medical schools who have taken further training in hospitals in the United States has been their lack of satisfactory command of English. Inability to communicate well with colleagues, staff physicians, and patients can readily lead to disastrous accidents in patient care. Furthermore, it is highly unlikely that any effective learning can occur without easy intercommunication between student and teacher. Facility with English is to be one of the requirements for participation in this program and will be one of the factors measured.

Successful completion of all phases of this evaluation program would result in certification of this achievement to hospitals and other interested organizations with the approval of the foreign-trained physician concerned.

The proposed program of the co-operating committee in detail includes recommendations for administrative organization-type examination and procedures, with suggestions for financing after developing a smaller group to carry on the plan of operation.

Progress of the many deliberations and discussions of the co-operating committee had reached a nearly completed plan for the individual evaluation of the foreign graduate education after March 1956, meeting. It was advisable to reveal this stage of progress to the advisory committee of educational organizations which had assembled in Washington, D. C., two years previous. The following agencies responded and were present April 20, 1956:

Responding Agencies

Council on Medical Education and Hospitals
Association of American Medical Colleges
American Hospital Association
Federation of State Medical Boards of the United States represented by Combs, Bierring, Crabb, Ezell, Seckinger, Swanson and Schnoor
American Medical Association — Board of Trustees and the Washington office
National Board of Medical Examiners
Educational Testing Service
Selective Service System
Sears Roebuck Foundation
New York University College of Medicine
Columbia Presbyterian Medical Center
Josiah Macy Jr., Foundation
Kellogg Foundation
National Committee for Resettlement of Foreign Physicians
Institute of International Education
American Council on Education
University of Pennsylvania Graduate School of Medicine
American Association of Collegiate Registrars and Admission Officers
Department of State — International Educational Exchange Service
Pan American Sanitary Bureau
Public Health Service — Division of International Health
China Medical Board
Cornell University Medical Center
Department of Health, Education, and Welfare of the United States
Health Resources Advisory Committee
Office of Defense Mobilization of the United States
Department of Defense of the United States

These groups were appraised of the educational evaluation program of foreign medical graduates and the plan of organization for activation, procedure and conduct of the plan after incorporation. After discussion of the many problems and possibilities of the plan, the report was adopted.

The co-operating committee recommended that the formation of a smaller non-profit organization be incorporated to take over as the "Evaluation Service for Foreign Medical Graduates." The co-operating committee then would dissolve, but could be useful in an advisory manner if complicated problems arise.

The federation group met after the meeting and selected Schnoor and Crabb to the "Board of Trustees of Evaluation Service for Foreign Graduates." Selection from other member groups of the co-operating committee were Kinsman and Mitchell, Association of American Medical Colleges; Hardwicke and Hamilton, American Hospital Association; and Reuling and E. S. Hamilton, American Medical Association. At the organization meeting of the trustees, the following officers were elected: Dr. Murray Kinsman, president; Dr. Sara Hardwicke, treasurer; Dr. E. S. Hamilton, vice president; and Dr. Stiles Ezell, secretary.

Legal Aspects

Incorporation of the "Evaluation Service of Foreign Medical Graduates" procedure necessitated engaging legal talent whereupon the evaluation service group selected Kirkland, Fleming, Green, Martin and Ellis, of Chicago, represented by Karl Nygren.

Legal advice suggested changing the corporate name of "Evaluation Service for Foreign Medical Graduates" to "Educational Council for Foreign Medical Graduates" to avoid technical difficulties in interpretation by the United States Department of Revenue. The above name was then adopted and several changes in by-laws also were made on legal advice, and two public representatives are to be added to the council. One member from the United States Department of Health, Education and Welfare, and one member from the United States Department of Defense.

Legal questions involving tax exemption have delayed final contacts with foundations for funds to proceed with the plan. Latest information reveals the prospects are now extremely bright and we anticipate an early favorable resolution of this problem.

The co-operative attitude and the revelation of satisfaction in the proposed program of the Council on Education of the Foreign Medical Graduate is made known in a communication from the state department. I herewith quote two paragraphs from this extensive communication:

"All, but a very small proportion of foreign interns and residents, who have trained or are training in American hospitals have been selected and screened solely by the hospitals making the appointments. The foreign medical intern or resident who comes to an American hospital without training and education at least approximate to that of his American colleague will find that either his program is reduced to a pure "work" program, which will doubtless prove disheartening and unprofitable, or he will find his appointment terminated after what may have been a long and expensive journey to this country, or he may find that he is serving to the actual detriment of the patients of the hospital in which he is serving. The cumulative effect of any sizable number of such cases on the exchange program and its objective need not be detailed."

"The foreign medical intern and resident program which has operated under exchange visitor regulations for the last seven years has made substantial contributions to the practice of medicine in a number of countries and to the understanding of American professional, cultural, and social progress in these countries. Its continuance, however, is jeopardized by the abuses we have noted. An agency as broadly based and professionally competent as the Educational Council for Foreign Medical Graduates in carrying out its proposed program will be making a contribution to interchange of knowledge and skills that could not possibly be equalled were the department to undertake the project with appropriated funds."

A survey of the present foreign medical graduate situation reveals that at this time there are some 6,023 foreign-trained physicians from 84 foreign countries in the United States on temporary post-graduate study basis; interns, 1,859; and residents, 4,174. In addition, some 1,000 foreign citizens on immigration visas are serving as house officers. Foreign medical graduates are especially located in a large number of eastern United States hospitals representing in some instances from 25 per cent to 50 per cent or more of the house staff group.

In 1955, some 1,777 foreign medical graduates were examined by various state examining boards, of whom 41 per cent failed.

During the past 10-year period, 1946-1955, seven states after examination have licensed the following number of foreign graduates: California, 602; Illinois, 968; Maryland, 233; New York, 1,600; Ohio, 406; Rhode Island, 138; Virginia, 116.

After all legal difficulties are solved and evidences of reasonable financial support are concluded, the educational council can then proceed to properly organize its official staff and prepare for its examination "premiere" in this country soon.

The results of two years of extensive discussions and studies of the co-operating committee have now resulted in developing a definitive plan for the *individual evaluation of the educational competence of the foreign medical graduate* as first suggested in a primitive resolution presented by the federation to the original groups before the organization of the co-operating committee. This plan, as adopted by all interested

organizations, when in effect, will thus eliminate the present 50 foreign medical school list as compiled by the Council on Medical Education and Hospitals and published in the Journal of the American Medical Association annually.

The federation group wishes to express its sincere gratitude for the untiring efforts and co-operative spirit of all groups in the co-operating committee and particularly special yeoman service by Co-operating Committee Chairman Donald Anderson and Council on Education and Hospitals Secretary Edward Turner and Assistant Secretary Walter Wiggins in the development of this program to provide a method expected to maintain the high educational standards in which all American medical groups are interested.

ADDENDA: *Interim Progress Since February Meeting of Federation:*

Feb. 14, 1957 the federal government tax department informed the Council on Education for Foreign Graduates of a "tentative" tax exemption status till the program has had actual operation for a year. After the first year's report, further consideration for tax exemption will be given.

Previously stated, two charitable foundations were considering aiding the Council on Education of Foreign Graduates on verification of tax exemption. This will now be in progress as the director and staff become active.

As reported to the February meeting, Dr. Stiles Ezell was approached to accept the directorship. Dr. Ezell had three conferences with the council members and after prolonged and deep consideration finally on July 7 announced his inability to accept.

On July 8 the executive committee offered the directorship to Dr. Dean F. Smiley, a former member of the co-operating committee representing the Association of American Medical Colleges. Dr. Smiley accepted on part time basis from July 15 to Oct. 1 when he relinquished his secretaryship of the Association of American Medical Colleges to give full time to the Council on Education of Foreign Graduates. Announcement of official offices in Evanston and further particulars of interest to the federation will be forthcoming as organization progresses.

POISON CONTROL

BASED on the latest authoritative information from the committee on toxicology of the American Medical Association, the Poison Control Information Center at the University of Arizona College of Pharmacy recommends the following measures to be taken in case of poisoning.

The aim of first-aid measures is to help prevent absorption of the poison. *Speed* is essential. First-aid measures must be started at once. If possible, one person should begin treatment while another calls a physician. When this is not possible, the nature of the poison will determine whether to call a physician first, or begin first-aid measures and then notify a physician. Save the poison container and material itself, if any remains. If the poison is not known, save a sample of the vomitus.

Measures to be Taken Before Arrival of Physician

I. Swallowed poisons

Many products used in and around the home, although not labeled "Poison," may be dangerous if taken internally. For example, some medications which are beneficial when used correctly may endanger life if used improperly or in excessive amounts.

In all cases, except those indicated below, *remove poison from patient's stomach immediately* by inducing vomiting. This can not be overemphasized, for it is the essence of the treatment and is often a lifesaving procedure. Prevent chilling by wrapping patient in blankets if necessary. Do not give alcohol in any form.

A. Do not induce vomiting if:

1. Patient is in coma or unconscious.
2. Patient is in convulsions.
3. Patient has swallowed petroleum products (i.e. kerosene, gasoline, lighter fluid).
4. Patient has swallowed a corrosive poison (symptoms: severe pain, burning sensation in mouth and throat, vomiting).

CALL PHYSICIAN IMMEDIATELY

(a) Acid and acid-like corrosives: sodium acid sulfate (toilet bowl cleaners), acetic acid (glacial), sulfuric acid, nitric acid, oxalic acid, hydrofluoric acid (rust removers), iodine, silver nitrate (styptic pencil).

(b) Alkali corrosives: sodium hydroxide-lye (drain cleaners), sodium carbonate (washing soda), ammonia water, sodium hypochlorite (household bleach).

If the patient can swallow after ingesting a corrosive poison, the following substances (and

amounts) may be given:

For acids: milk, water, or milk of magnesia (1 tablespoon to 1 cup of water).

For alkalis: milk, water, any fruit juice, or vinegar

For patient 1 to 5 years old –1 to 2 cups
for patient 5 years and older – up to 1 qt.

B. Induce vomiting when non-corrosive substances have been swallowed:

1. Give milk or water (for patient 1 to 5 years old – 1 to 2 cups for patient over 5 years – up to 1 quart).
2. Induce vomiting by placing the blunt end of a spoon or your finger at the back of the patient's throat, or by use of this emetic: 2 tablespoons of salt in a glass of warm water.

When retching and vomiting begin, place patient face down with head lower than hips. This prevents vomitus from entering the lungs and causing further damage.

II. Inhaled poisons
1. Carry patient (do not let him walk) to fresh air immediately.
2. Open all doors and windows.
3. Loosen all tight clothing.
4. Apply artificial respiration if breathing has stopped or is irregular.
5. Prevent chilling (wrap patient in blankets).
6. Keep patient as quiet as possible.
7. If patient is convulsing, keep him in bed in a semidark room; avoid jarring or noise.
8. Do not give alcohol in any form.

III. Skin contamination
1. Drench skin with water (shower, hose, faucet).
2. Apply stream of water on skin while removing clothing.
3. Cleanse skin thoroughly with water; rapidity in washing is most important in reducing extent of injury.

IV. Eye contamination
1. Hold eyelids open, wash eyes with gentle stream of running water immediately. Delay of few seconds greatly increases extent of injury.
2. Continue washing until physician arrives.
3. Do not use chemicals; they may increase extent of injury.

V. Injected poisons (scorpion and snake bites):
1. Make patient lie down as soon as possible.
2. Do not give alcohol in any form.
3. Apply tourniquet above injection site (e.g., between arm or leg and heart). The pulse in vessels below the tourniquet should not disappear, nor should the tourniquet produce a throbbing sensation. Tourniquet should be loosened for 1 minute every 15 minutes.
4. Apply ice-pack to the site of the bite.
5. Carry patient to physician or hospital; *DO NOT LET HIM WALK.*

VI. Chemical burns
1. Wash with large quantities of running water (except those caused by phosphorus).
2. Immediately cover with loosely applied clean cloth.
3. Avoid use of ointments, greases, powders, and other drugs in first-aid treatment of burns.
4. Treat shock by keeping patient flat, keeping him warm, and reassuring him until arrival of physician.

MEASURES TO PREVENT POISONING ACCIDENTS

A. Keep all drugs, poisonous substances, and household chemicals out of the reach of children.

B. Do not store nonedible products on shelves used for storing food.

C. Keep all poisonous substances in their original containers; do not transfer to unlabeled containers.

D. When medicines are discarded, destroy them. Do not throw them where they might be reached by children or pets.

E. When giving flavored and/or brightly colored medicine to children, always refer to it as medicine – never as candy.

F. Do not take or give medicine in the dark.

G. READ LABELS before using chemical products.

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Nov. 1, 1957, Progress Report from the Poison Control Information Center at the University of Arizona College of Pharmacy

STATISTICS of 25 poison cases reported since the Oct. 1, 1957 progress report:

Age:
84 per cent involved under-5 year age group
12 per cent involved 16 to 30 year age group
4 per cent involved over 45 year age group

Nature of Incident:
92 per cent accidental
8 per cent intentional

Outcome:
96 per cent recovery
4 per cent fatal

Time of Day:
32 per cent occurred between 6 a.m. and noon
44 per cent occurred between noon and 6 p.m.
24 per cent occurred between 6 p.m. and midnight
none occurred between midnight and 6 a.m.

Causative Agent:
32 per cent aspirin preparations
12 per cent household antiseptics
8 per each for household bleaches, insecticides, and sleeping caupsules.
4 per cent each for crayons, hair dye, household detergents, match tips, moth balls, antihistamines, flu tablets, and a combination of rubbing alcohol and a household antiseptic.

AMA OPPOSES ELIMINATION OF MILITARY VETERINARY CORPS

IN a letter to Defense Secretary Neil A. McElroy, the American Medical Association has asked for reconsideration of a directive that would in effect abolish the military veterinary corps. The question first rose in 1956 when the then defense secretary, Charles E. Wilson, indicated his intention to eliminate the corps in the continental United States and turn over meat inspection duties to he deparment of agriculture. After receiving a number of protests, Mr. Wilson held up action on the directive. On Oct. 1 of this year, shortly before his retirement, Mr. Wilson issued the directive that would mean the end of the veterinary corps. In asking Mr. McElroy to reconsider the Wilson order, the AMA pointed out that the house of delegates in June 1956, voted to oppose abolition of the corps. The letter to Mr. McElroy, signed by Dr. Ernest B. Howard, assistant AMA secretary, said in part:

"The requirement for trained veterinarians to inspect animals and animal food products is necessary for the maintenance of the health needs of military personnel at all times. The trained veterinarian capable of accomplishing such a mission must be responsive to the military command. Experience has shown that when adequately trained veterinarians are not available to the military, this duty is by command decision placed upon military physicians. Accordingly, such action reduces the services of military physicians available for military medical requirements in care of patients. For these and other reasons . . . the American Medical Association requests that you carefully reconsider the Oct. 1 directive in light of your responsibilities for the health of the personnel of the armed forces under their world-wide mission and world-wide bases."

Copies of the letter were sent to Chairman Carl Vinson of the house armed services committee and to Richard B. Russell of the senate armed services committee.

ACTIVE TB DECLINES 30 PER CENT IN FIVE YEARS, BUT STILL 250,000 CASES

ALTHOUGH active tuberculosis has declined 30 per cent in the last five years, the general control picture is not entirely reassuring. This is the report of Public Health Service and the National Tuberculosis Association on results of the only nationwide survey in five years. The check shows that despite intensive efforts for control, almost 40 per cent of the active cases are unknown to health authorities, and these people are not receiving treatment. ("Unknown" cases are estimated on the basis of X-ray survey findings.) Other findings—In the five years there has been no decrease in number of persons who are or have been ill with the disease, and there are still about 250,000 persons known to have tuberculosis in its active form. The most encouraging phase of the report is that active cases have dropped from 350,000 to 250,000 and inactive cases requiring supervision of health departments from 600,000 to 550,000.

RX., DX., AND DRS.

By Guillermo Osler, M.D.

CIVIL DEFENSE has had a shot in the arm from the **guided missile** progress. People have become scared enough to ask what to prepare for 'atomic bomb' attacks, — where to go, what to put in a stockpile, etc. . . . Physicians may get out their publications on **'The Practitioner in the Atomic Age,' etc.** We can't say much about it in a paragraph, but one can always start with the reminder that damage may result from mechanical injuries, thermal burns, and radiation injury. Each of these can be mild to severe; can affect various parts of the body; can occur together; and the last-named can be acute or delayed in its effect. **'Radiation sickness'** is a huge study which involves careful clinical follow-up, many lab tests, and the use of decontamination, bed rest, sedation, antibiotics, ACTH, fluids and transfusions, antihemorrhagics, antinauseants, and intensive vitamin therapy. It is quite probably that 'the end is not yet,' and that better methods of protection will be described.

Someone up there (in Ohio) loves us! The Ohio State Medical Journal for June 1957 had three references to pieces in ARIZONA MEDICINE. . . . One concerned an article by Dr. Lockie on barbiturates. The other references were separate, and by chance are also by Dr. Lockie.

Here we go again on an old hobby-horse of ours, — **desalted water.** This is probably the seventh article on that topic in this column in 10 years. The Guvmint (in the person of D. S. Jenkins, Department of the Interior) says industry is lagging in a search for methods, but I doubt it in general, and also because the old Maxim Silencer Co. of Hartford, Conn., says that it now has a method which costs only 20 cents per thousand gallons. . . . This compares with Colorado River water in Los Angeles at 6.8 cents, and Feather River water at 14 cents. The best previous desalting has ranged between 30 and 40 cents. . . . The process requires cheap fuel, since it consists of flash-boiling, plus re-use of heat, plus vacuum distillation. . . . We don't know what the definition of 'fresh water' is in Hartford, but it is probably a better one than the Dept. of Interior, — 1,000 P.P.M. of solids, most of which are salt. This isn't very good for irrigation. . . . Maybe we'll still have news for other paragraphs later.

Names of TRADE PREPARATIONS are sometimes interesting, sometimes odd, sometimes wierd (which means "out of this world"). . . . We have just received some samples of a "pure vegetable bulk LAXATIVE" with a name 'Saraka' one tries at once (without success) to pronounce backwards. . . . The strangest angle is the names of the materials which it contains, — Bassorin and Frangula They are right out of an 1820 book on English herbs and simples, or out of a gag-writer's book on double-talk.

When your **low-cholesterol diet** has beeen imperfect over a weekend, or if you want to protect your arteries from a genetic flaw dating back to 1700, you now have possible protection. . . . The Armour Laboratories, for instance, have 'Arcofac' on the market. It is listed as "a concentrate nutritional supplement," and it contains a high concentrate of linoleic acid (which "lowers high blood cholesterol"); vitamin B6, or pyridoxine (which is necessary for conversion or linoleic acid to the primary essential fatty acid, arachidonic acid); and vitamin E, a tocopherol (which is an antioxidant, and which protects linoleic acid from loss of potency). . . . There is the process, which may not be as simple as it sounds.

We have read of the successful OPERATIONS ON THE AORTA and other great vessels. Dr. de Bakey of Baylor, and his colleagues in that field, have had a kindly coverage in the Saturday Evening Post on their replacement of aneurysmal and stenotic arteries (Dr. Cooley has reported that their mortality for 120 cases was 6 per cent.) . . . Dr. Robert Gross of Boston, premier cardiac surgeon, told the third annual meeting of the American College of Angiology that COARCTATION of the aorta should almost always be operated on. The average age of death is 30 years of age, so it has to be caught early. The cause of death is distributed between aortic rupture, bacterial infection, congestive heart failure (which we'd have thought most common), and intracranial hemorrhage.

Everyone has a suggestion for our scientific colleagues who have to send up a **satellite** soon. Often it is a complaint, or a joke (like the report that the American vehicle would contain 3 cows. Wonderful propaganda. "The herd shot 'round the world.") . . . The medical researchers, who have had to stand off the antivivisectionists for years, know how the space boys feel as they have to decide in sending up materials, mice, or men. The experiments are so very public. . . . The Russians must be dumb if they thought opinion wouldn't be aroused in favor of a dog; it served only to call up the dormant memories of the Communists" callous and deathly feeling towards human life.

Perhaps you have seen a recent issue of the Pfizer 'Spectrum' (once published in toto in the

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DUKE R. GASKINS, M. D.

Dear Doctor:

I hope you are familiar with the Preferred Surgical Plan which is now being offered to members of HBA. This optional plan is another forward step by this company in offering up-to-date medical coverage to our members.

For the internist, this new plan means that HBA will pay an allowance for doctor calls to the member while hospitalized as a non-surgical patient. For the surgeon, this plan helps to close the gap between the member's surgical allowance and the fee charged. Under the Preferred Surgical Plan, benefits for surgical operations are all increased 50%. Anesthesia benefits are also increased by a like amount.

We wish to express our appreciation to the many doctors who assisted us with their suggestions resulting in this new coverage.

Be sure to call us if you should have any questions regarding any of our plans, or if you would like detailed information.

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HOSPITAL BENEFIT ASSURANCE

Duke R. Gaskins, M.D.
Medical Director

DRG:mjf

J.A.M.A.). The editors asked Dr. S. S. Lichtman of Cornell and Dr. W. Paul Havens of Jeff. the AMOUNT OF BEDREST NEEDED IN HEPATITIS. . . . Dr. Lichtman feels very strongly that strict bed-rest is indicated for any symptomatic case, for those with lab. evidence of liver damage, and for those with liver and spleen enlargement. It should continue for 3 months, or longer if the signs persist. . . . Havens is more tolerant, and allows patients up when they feel like it. . . . Each quotes work in the past which seems to substantiate their attitude. I guess we'll have to wait and see, and possibly be cautious, or at least compromise, meanwhile...

There are certain non-medical public media where the pysician may appear with his writings in a legitimate, nay even laudable and desirable way. A Tucsonan has made it, and very well too. **Dr. W. P. Holbrook** wrote one of the medical articles in 'This Week' Magazine (in many Sunday papers). His topic was, naturally, 'Rheumatoid Arthritis' and he did a perfect and brief job of it.

Another Sanatorium Association meeting has just ended in California. The variation in the use of current METHODS FOR TREATMENT OF TUBERCULOSIS still seems to be considerable. Everyone uses drugs. Everyone still uses rest. Most people allow home care at times. Everyone believes in surgery. Unanimity, however, is completely lacking (and everyone gets good results!) . . . San or hospital care is best for many patients until they have gotten a sure result. Home care is useful when the cooperative, 'negative' patient can be conveniently cared for. . . . Complete rest is needed by acutely ill, febrile, symptomatic patients. They may be cautiously ambulant when their x-rays and symptoms allow it. . . . Two drugs (PAS and INH) are enough for some non-acute patients (and some non-drastic physicians). Three drugs (SM, PAS, and INH) are used for acute lesions, extra-pulmonary lesions, and by a few thoughtful M.D.s. The use of daily doses of streptomycin must be justified by those who wish to take the hazards. . . . Resection is approved when there is a destructive lesion still present after 4 to 8 months of chemotherapy, possibly by planigram, and in spite of negative bacterial findings. A closed negative lesion causes a split decision; more people now prefer to wait, especially if the residue is small (1 cm lesions). . . . The proponents of 600 to 1,200 mg of INH (Isonixid), and the use of 4 drugs for 100 per cent conversion of sputum are possibly increasing.

Have you ever saved a person's life by **resuscitation?** The doctor's dream used to be about the child who was choking because of an obstruction in the larynx. Out came a trusty pen-knife. Zip goes a tracheal incision. Wheee goes the renewed breathing. . . . The tracheotomy could still happen, but there is a lot more chance that the breathing may be stopped for some other reason than a marble or foreign object. The treatment is lots less bloody than a tracheotomy. **Mouth-to-Mouth resuscitation** is simple, effective and can be used very often. First, clear the pharynx. Second, pull the jaw upward with one hand. Next, put the other hand on the epigastrium and exert a constant pressure. Finally, breath an ordinary breath into the mouth, disengage, blow an alternate breath into the air, then one in the mouth, etc. . . . In older children and adults the nose may have to be pinched-off during the blow-in. . . . It's a great sensation to work it successfully.

The New York Academy of Sciences sponsored a 'CONFERENCE ON MEPROBROMATE AND OTHER AGENTS,' much to the joy of several pharmaceutical companies. There were quite a few special uses of the drugs, such as flight neuroses, anxiety, depression, alcoholic withdrawal, and muscle spasm, but the best item we saw in the report (by Wyeth, the Equanil maker) was a pharmacological classification of tranquilizing drugs. The 'antonomic suppressants' include reserpine and chlorpromazine. The 'central relaxants' include meprobromate and mephanesin. . . . The suppressants may produce a feeling of detachment and indifference. The central relaxants remove hostility, but normal humans (under no tension) have no mental or somatic changes.

Dr. Paul Hawley, Director of the American College of Surgeons and a former VA medical personality, can be called fairly outspoken, and at all times. He has recently discussed **"Medical Writing,"** in the Medical Annals of the District of Columbia, and says: "With few exceptions, the **worst writing** I have ever encountered has been in **medical publications."** . . . (He started his own criticism with a prepositional phrase, used an extra comma, and exaggerated for emphasis; probably reads too much medical writing.) . . . He continues as follows, — "I do not know why this should be true except that medicine is almost the only profession, other than literature, in which the reputation of the individual is largely determined by his publications; Medicine differs from literature in that medical reputation is based upon quantity of writing whereas literary reputation depends upon quality."

A recent MEDICAL CARTOON in the NEW YORKER is only a slight exaggeration of the 1957-67 'Law of Possibilities.' A couple of 'high steel' workers were seen to be putting beams together on top of a new skyscraper. One of them had just lighted a cigarette. The other had apparently just criticized him. In reply the smoker says, — "I figure what's it all matter? If cigarettes don't get you, radiation will!"

New Custodian Laws May Save You Taxes

During the past months state after state has adopted the new Uniform Gifts to Minors Acts which make it simple to give securities to a minor. Now 39 states have a custodian law with the likelihood of several more passing such laws within a few months.

The following states now allow gifts of cash as well as securities: Arizona — Arkansas — Delaware — Florida (Oct. 1st) — Georgia — Idaho — Indiana — Kansas — Maryland — Minnesota — Missouri — Montana — Nebraska (Sept. 20th) — Nevada — New Hampshire — New Mexico — North Dakota — Oklahoma — Pennsylvania — South Dakota — Tennessee — Texas — Utah — Vermont — West Virginia — Wyoming.

HOW THE LAW WORKS

1. **Gifts to persons under 21 or stocks, bonds, mutual fund shares or other securities can be made in the name of a custodian.**
2. **Generally, the custodian may be any adult member of the family — a parent, brother, sister, aunt or uncle — even a child's guardian.**
3. **The custodian may buy and sell securities, collect dividends, and use them or reinvest and accumulate them for the child's benefit. The only restriction is that the custodian is required to act with prudence in seeking reasonable income and preservation of capital.**
4. **Registration of securities is easy. Here is how your investment dealer would register them for you:**
   "(name of custodian), as a custodian for (name of minor) a minor . . ."
   This will be followed by a specified phrase which each state has prescribed for its Custodian law, such as:
   ". . . under the New York Uniform Gifts to Minors Act."

TAX ADVANTAGES

The new Custodian Law may enable you to shift income from high to low Federal tax brackets, because the income from investments or other property which you give to a minor child will be taxable to the child, if at all. AT TAX RATES MUCH LOWER THAN YOUR OWN.

Income from property given to a minor — either under custodianship laws or under an irrevocable trust — WHICH IS USED FOR THE SUPPORT OF THE MINOR will be taxable to the parent no matter who makes the gift.

There are two estate tax advantages from giving while you live. If your gift is taxed at all, it will be at the lower Federal gift tax rates instead of being subjected later to the higher estate tax rates.

Your gift also comes off the TOP of the estate tax scale and and moves to the BOTTOM of the gift tax scale.

You may not have to pay any gift taxes because you may give away $30,000 tax free during your lifetime. You may give $3,000 annually to as many persons as you wish without incurring any gift tax and without using up any of your lifetime exemption. Until you give any one person $3,000 a year it does not even have to be reported to the Government. With your wife, these figures double.

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Organization Page

CIVICS

Norman A. Ross, M.D.

THE October 1957 issue of Arizona Medicine is a number that we have had bound and are adding to our permanent library. Book marks are placed at pages 591, 605, 618, and 632. The articles beginning on these pages typify the reactions of organized medicine, the individual physician, the free enterpriser, physician, and volunteer programers, to the fixing of fees, fee schedules.

In *"How Fixed Fee Schedules Result in Government-Controlled Medicine,"* page 605, by James L. Doenges, M.D., we find such statements as:

Statement No. 1 – "Government medicine is no more inevitable as the result of the acceptance of fixed fee schedules than is total socialism an inevitable result of the acceptance by the people of a nation of the nationalization of one segment of the economy. * * * but history provides no important example of the exception."

Statement No. 2 – "As soon as a third party enters the picture, regardless of the area, the destruction of the free practice of medicine is under way."

Statement No. 3 – "Too many physicians have accepted third party interference with their practices. Control is control, and it matters not who exercises this control. The fact of control remains unchanged."

Statement No. 4 – "Many physicians believe that anything they accept without some agency issuing a regulation or without a law, constitutes a 'voluntary' act."

Statement No. 5 – "If a group of physicians constitutes the third party, the element of control is not eliminated."

We would suggest that you re-read the articles on these several pages, considering the above.

In this same vein, Scope Weekly, Oct. 9, 1957 in News from the Capital:

AMA TO OPPOSE LEGISLATIVE LINK OF HOSPITAL PLANS, SOCIAL SECURITY

By World Wide Medical News Service, Washington Bureau

Washington – The American Medical Association will oppose any legislation designed to connect prepaid hospitalization plans to the social security program, according to a spokesman for the AMA.

* * * "We believe that by linking any hospitalization plan with the social security program, the government would be taking an irrevocable step toward a pattern of socialized medicine," the AMA spokesman said. "Both the hospitalization insurance and social security programs are working out quite well independently of each other. Putting them together would simply be the first step toward a broader and more insidious program of government domination."

ARIZONA'S GROWTH PROJECTED

Arizona Business Bulletin, October 1957, projects the manpower requirements in the Phoenix area. In that this growth is no more than that of other populous areas of the state, we are offering these, their figures, for statewide consideration.

Where did the labor market area stand in 1956 compared with 1950? Total population – up 52 per cent. Total employment – up 43 per cent. Total nonagricultural wage and salaried employment – up 66 per cent. Manufacturing employment – up 150 per cent.

How will industries grow from 1956 to 1961? Total population– up 39 per cent. Total employment – up 58 per cent. Total nonagricultural wage and salaried employment – up 62 per cent. Manufacturing – up 135 per cent. Finance, insurance and real estate – up 82 per cent. Construction – up 68 per cent. Government – up 32 per cent.

How will occupational needs grow by 1961? Semiprofessional workers' needs – up 100 per cent. Professional workers' needs up – 55 per cent. Engineers and draftsmen needs – up 100 per cent. Skilled workers' needs – up 78 per cent. Electrical repairmen and electronic technicians' needs – up 200 per cent.

How do the present labor supply and the planned output of training and educational faci-

lities meet this challenge? Thirteen per cent now employed will have retired from employment. Our present labor force will supply 53 per cent. Present training plans will furnish 19 per cent. On-the-job training will provide 13 per cent. Forty-four per cent of the increase in employment must needs be met by increasing training activity in our state or by costly recruiting.

FIVE HEALTH-MEDICAL BILLS ENACTED AS ADJOURNMENT NEARS

AMA Washington Letter 85-34, Aug. 23, 1957

Authorization for U. S. grants to help in construction of hospitals to be used by both Indians and non-Indians; extent of U. S. grant will depend on estimated proportion of beds to be used by Indians; U. S. also to pay for care of Indians. (This is Public Law 85-151).

To those of us looking to a combined county and Indian service as a possible medical school teaching facility, as in New Mexico, this law is encouraging.

SMALL BUSINESS LOANS TO HEALTH FACILITIES NEAR $3 MILLION MARK

AMA Washington Letter 85-28, July 12, 1957

Small Business Administration, reporting on its loan activities in the health field, has estimated that it has made 34 loans totalling $2,976,550 for construction, expansion or equipping health facilities. Loans were made to proprietary hospitals, nursing homes, medical and dental laboratories and one combined medical-surgical-dental clinic. Money is loaned either directly to the borrower or in participation with a bank. The total covers the period between last October and July 1 to this year.

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INCREASING FLU INCIDENCE EXPECTED UNTIL EARLY JANUARY

SURGEON General Burney's advisory committee on influenza believes there will be increasing incidence of Asian influenza until early January, when the total of cases will level off, then start to decline. In announcing the committee's forecast, Dr. Burney made these additional points:

1. Doubling of the potency of the vaccine (see special report 85-6) was made possible because the virus now is growing "almost profusely" for manufacturers.

2. Substantial protection is obtained from current vaccine (200 units), and people who already have been vaccinated should not be vaccinated again at this time with the new vaccine (400 units), in view of vaccine shortages. The new vaccine is expected to be between 10 and 15 per cent more effective than the old.

3. While increasing the potency will slow production about one-third, processing has been stepped up to such a degree that over 80 million doses were available by the end of November, an amount far in excess of original goals.

4. One flaw in the vaccination campaign is failure to vaccinate more patients whose conditions make them high medical risks.

5. A number of controlled tests suggest that "constitutional symptom" reactions to the vaccine appear only about in 4 per cent of those vaccinated.

PHS COMMITTEE OPPOSES MASS VACCINATIONS WITH BCG

AFTER studying the advantages and disadvantages of BCG vaccine to control tuberculosis, a special Public Health Service committee recommends against mass vaccination campaigns, proposing instead that vaccinations be limited to special situations where exposure to the disease is unusually high and where other means of control are inadequate. The committee concluded that vaccinations should be limited to:

1. Physicians and other medical personnel working in hospitals with inadequate tuberculosis control programs.

2. Families with whom a member infected with tuberculosis must reside.

3. Those associated with institutions in which exposure is known to be high, such as certain mental hospitals and prisons.

The committee gave weight to arguments that because persons vaccinated with BCG have a permanent positive reaction to testing, testing and case-finding surveys are made difficult. It also pointed out that vaccination campaigns would occupy the time of persons trained in TB control work, who, in the committee's opinion, could be more profitably employed in other directions.

In releasing the report, PHS comments:

"BCG has been used in tuberculosis immunization for more than 30 years, and has had broad acceptance in certain European nations. There has been and still is wide variance of opinion as to its precise value, even in some of the countries that have been using BCG vaccine for many years. . . . The committee points out that studies have shown the effectiveness of BCG ranges from 0 to 80 per cent. Because of this wide range, the committee recommends against large-scale vaccination programs in this country."

Other recommendations and findings, some in conflict with those of the PHS committee, have appeared in the AMA Journal in the past few months: No. 9, pages 951 and 974; No. 13, page 1501; No. 10, page 1146, all Vol. 164.

CIVIL SERVICE COMMISSION PUSHES FOR HEALTH INSURANCE PLAN

IN an effort to disseminate information fully and gain widespread support among U. S. workers before next session of congress, the civil service commission is issuing a series of fact sheets explaining the commission-sponsored program of health insurance for federal civilian employees. The particular plan was the basis of a bill introduced last session but not acted upon. Other ideas were proposed in prior sessions, but there has been no action on any of them. Under the program now sponsored by CSC, the participating employee would have to take both basic and catastrophic insurance, with the U. S. paying a third of the cost. Basic

insurance could be that provided by employees' unions or associations, fraternal groups or Blue Cross-Blue Shield, but it would have to meet some standards set by CSC.

The latest CSC fact sheet on insurance includes eight questions and answers, and three statistical tables, showing (a) variation of premium costs offered by federal employee unions and associations, city-by-city variation in Blue Cross-Blue Shield costs, and (c) costs under New York's HIP and the Group Health Association of Washington, D. C.

ALCOHOL AND CA

HEAVY consumption of alcohol when combined with heavy smoking is found to be an important factor in the development of cancers of the larynx and the oral cavity, said Dr. Ernest L. Wynder of the Sloan-Kettering Institute for Cancer Research, New York.

Speaking at the annual meeting of the American Cancer Society at the Park Sheraton Hotel, Dr. Wynder stated that for the heavy smoker who consistently drinks seven or more "shots" of hard liquor per day the risk of developing cancer of the larynx or oral cavity (tongue, gums, buccal mucosa, palate, tonsils, and pharynx) is more than 10 times as great as for the moderate and non-drinker who smokes the same amount.

The type of alcohol consumed is also significant, said Dr. Wynder. A positive association has been established only for hard liquor not wine or beer. The study, to date, does not contain enough wine or beer drinkers to allow conclusive analysis for this type of drinking.

Role of Alcohol Unknown

It cannot be determined at this time whether alcohol alone can initiate these cancers since it has not been possible to find a sufficient number of heavy drinkers who are non-smokers. Thus, it is difficult to decide whether heavy alcohol intake is an initiator or merely a promoter of laryngeal and oral cancer.

"One can only theorize," said Dr. Wynder, "as to why excessive alcohol consumption increases the risk of developing cancers of these sites. The alcohol either could act directly upon the tissues, making them more permeable to tobacco smoke, or systemically by producing a nutritional deficiency which might induce tissue changes that would make them more susceptible to carcinogens. Edentia was found to be higher among larynx cancer patients than the controls; this condition may also be a reflection of the dietary deficiency.

Of particular interest, noted Dr. Wynder, is the fact that the relative risk of a cigar and pipe smoker developing cancer of the oral cavity and larynx appears greater than for the cigaret smoker, which is in contrast to the pattern seen in lung cancer, in which the risk of developing the disease is more closely associated to the amount of cigarets consumed. Alcohol consumption is not a significant factor in the development of lung cancer. Also, Dr. Wynder noted that the further up in the respiratory tract the site of the cancer, the greater the percentage of pipe and cigar smokers.

Factors Ruled Out

Several factors once believed to be associated with the development of these cancers were apparently ruled out by Dr. Wynder's studies. Hot food seems to have no significance; voice strain could not be demonstrated to be a possible cause of larynx cancer; occupational exposures did not appear to be a factor. It is of interest also that dental irritation or general trauma seem to play no particular role in the development of cancers of the oral cavity.

The studies reported by Dr. Wynder are based on 209 male patients with cancer of the larynx; 209 matched controls; and 132 male patients with lung cancer also serving as controls; 543 male patients with cancer of the oral cavity, and 207 male control patients (patients with benign lesions of head and neck or chest and patients with cancer of the lower gastrointestinal regions or lymphomas).

GASTRO-INTESTINAL OBSTRUCTION
by Meyer O. Cantor, M.D., and Roland P. Reynolds, M.D., 565 pages. Illustrated. (1957) William & Wilkins. $18.

Two surgeons from Grace Hospital, Detroit, co-ordinate the roles of such branches of medicine as raidology, internal medicine, and surgery, in the treatment of advanced cases of intestinal obstruction. All phases of management and treatment are considered, including nursing. The book's comprehensive, well-illustrated, and a good source of reference.

Stacey's Medical Books, San Francisco.

VOLUNTARY HEALTH INSURANCE

VOLUNTARY health insurance against costs incurred through sickness and accident continues to spread its protective coverage over more and more Americans.

The Health Insurance Institute, taking a forward look to year-end growth figures, predicts that by Dec. 31, 1957, over 123 million people in the U. S. will be protected by some form of health insurance designed to help pay hospital, doctor or other medical care bills. This represents close to 75 per cent of the total U. S. civilian population.

Breaking down the national totals on health insurance coverage for 1957, an estimated 109 million persons will be covered for surgical expenses, 74 million will have regular medical expense protection, 13 million will be insured against major medical expenses, and 43 million for loss of income coverage, in addition to the 123 million protected against the cost of hospital bills. Biggest growth in the type of coverage in recent years has been major medical expense insurance which helps to absorb the cost of serious, or catastrophic, illness.

Health insurance today covers more people than any other single type of insurance in force, the institute reports.

Total health insurance benefits paid out this year by insurance companies, Blue Cross-Blue Shield and miscellaneous plans, will amount to an estimated $4.2 billion, as compared to $3.6 billion in 1956. This accounts for a major contribution to the nation's over-all medical bill.

CANCER SOCIETY

PHOENIX will be the site of the American Cancer Society's annual regional meeting in 1958. This was voted by delegates at the 1957 annual business meeting Sept. 24 in Las Vegas.

Lay and professional delegates for Region Six which is composed of the states of Arizona, California, Colorado, Nebraska, Nevada, New Mexico and Utah, voted to invite the delegates of Region Five to join them for a combined meeting of the two regions in September 1958 in Phoenix. Arizona delegates to the meeting were Dr. Edward H. Bregman and Dr. Mary Caldwell.

Also at the Las Vegas meeting, Horace B. Taylor, past regional chairman, nominated Dr. Edward H. Bregman of Phoenix to be Region Six chairman for the coming year. He was unanimously elected to the post by the delegates.

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AMERICAN CANCER SOCIETY SEMINAR

Jan. 23 through 25, 1958

Tucson Inn *Tucson, Ariz.*

PANEL

Axel N. Arneson, M.D., Onconological Gynecologist, 457 North Kings Highway, St. Louis.

James Barrett Brown, M.D., Plastic Surgeon, 508 North Grand Avenue, St. Louis 3, Mo.

Vincent F. Collins, M.D., Therapeutic Radiologist, Baylor University, Houston, Texas.

Ross Golden, M.D., Diagnostic Radiologist, University of California.

Cornelius F. Lehmann, M.D., Dermatologist, 705 East Houston Street, San Antonio, Texas.

Ian G. MacDonald, M.D., Oncological Surgeon, 2009 Wilshire Boulevard, Los Angeles.

Arthur Purdy Stout, M.D., Pathologist, College of Physicians and Surgeons.

E. Dale Trout, Ph.D., Physicist, General Electric Company.

Thursday, Jan. 23 – 9:45 through 11:30 a.m.

SKIN TUMORS – Doctors Brown, Collins and Lehmann

1. Doctor Lehman: "The Dermatologist and Skin Cancer."
2. Doctor Collins: "Radiotherapy of Skin Lesions."
3. Doctor Brown: "Surgical Treatment of Skin Lesions" – 25 minutes.

12-2 – Luncheon with round table discussion. (cost included in registration fee)

Thursday, Jan. 23 – 2:30 through 4:00 p.m.

CANCER OF THE HEAD AND NECK – Doctors Brown, Collins, Golden, MacDonald and Stout.

1. Doctor Golden: "Roentgen Diagnosis of Diseases of the Sinuses and Larynx."
2. Doctor Stout: "Carcinoma in situ (Larynx)."
3. Doctor Brown: "Surgical Treatment of Cancer of the Head and Neck."
4. Doctor MacDonald: "Prophylactic Neck Dissection, Prophylactic Neck Irradiation. Surgery vs. Irradiation, Carcinoma of the Lip and Larynx."
5. Doctor Collins: "Radiotherapy in Cancer of the Head and Neck" – 15 minutes.

Friday, Jan. 24 – 9:30 to 11:00 a.m.

THE ABDOMINAL MASS – Doctors Golden, MacDonald and Stout.

1. Doctor Golden: "Diagnostic Procedures and Examples in Differential Diagnosis of Abdominal Masses."
2. Doctor Stout: "Pathology of Abdominal Masses."
3. Doctor MacDonald: "Surgery of Abdominal Masses, Including a Discussion of the Curability of Late Cancer."
4. Doctor Collins: "Radiotherapy of the Abdominal Mass."

12-2 – Luncheon with round table discussion.

Friday, Jan. 24 – 2:30 to 4:00 p.m.

PELVIC TUMORS – Doctors Arneson, Collins and Stout.

1. Doctor Arneson: "The Pros and Cons of Endometrial Carcinoma" (Surgery alone, irradiation alone, combined therapy) – 30 minutes.
2. Doctor Collins: "Cancer of the Ovary" – Therapy – ?Cobalt – 30 minutes.

Saturday, Jan. 25 – 9:30 through 10:15 a.m.

Mr. Trout: "The Application, Limitation and Dangers of Radiation Therapy."

10:30 a.m. through 12

END RESULTS AND COMPLICATIONS – Doctors Arneson, Brown, Collins, MacDonald and Stout.

1. Doctor Brown: "The Treatment of Lesions from Irradiation, Atomic Radiation and Cathode Ray Burns."
2. Doctor Arneson: "Carcinoma of the Cervix following Cervical Irradiation, End Results."
3. Doctor MacDonald: "End Results, 600 Cases of Carcinoma of the Breast" – 15 minutes.
4. Doctor Stout: "Results Following 2 M.E.V. Irradiation in Inoperable Lung Cancer."
5. Doctor Collins: "End Results and Complications Cancer of the Breast" – 15 minutes.
6. Dr Lehman: "End Results – Skin Cancer."

Seminar to be held at the Tucson Inn, Jan. 23-25,

The American Academy of General Practice has approved the American Cancer Society seminar to be held at the Tucson Inn, Jan. 23-25, 1958, for a total of seven hours formal credit (Category I).

FUNDAMENTAL CANCER RESEARCH

THE 12th annual symposium on fundamental cancer research will be held March 6, 7 and 8, 1958 at the University of Texas M. D. Anderson Hospital and Tumor Institute, Houston, Texas.

The topic for the symposium will be "Radiation Biology and Cancer." The first day will be devoted to papers from the staff at M. D. Anderson Hospital which relate to the general symposium subject. The final two days of the program will consist of papers presented by recognized authorities in radiation research.

Chairmen for the radiation biology sessions include: Titus C. Evans, Radiation Research Laboratory, University of Iowa College of Medicine; Jacob Furth, Pathology Department, Children's Cancer Research Foundation, Inc., Boston, and Henry S. Kaplan, Radiology Department, Stanford University Medical School, San Francisco. General chairman of the symposium is Warren K. Sinclair, chief physicist at the University of Texas M. D. Anderson Hospital and Tumor Institute.

LOS ANGELES RADIOLOGICAL CONFERENCE

THE 10th annual mid-winter radiological conference, sponsored by the Los Angeles Radiological Society, will be held at the Biltmore Hotel, Los Angeles, California, on Saturday and Sunday, Feb. 22 and 23, 1958.

An outstanding program of pertinent interest has been arranged and the guest speakers will be: Dr. Ralston Paterson, Manchester, England, Professor William V. Mayneord, London, England; Dr. D. L. McRae, Montreal, Canada; Dr. E. B. D. Neuhauser, Boston, Mass.; Dr. Robert Stone, San Francisco; Dr. L. H. Garland, San Francisco; and Dr. G. W. Beadle, Pasadena.

The conference fee of $20 includes two luncheon meetings featuring questions and answers. A banquet ($7.50 per plate), preceded by cocktails, will be held Saturday evening. Reservations may be made through: Dr. John H. Eaton, 65 No. Madison Avenue, Pasadena, Calif.

Courtesy cards will be available to residents in radiology and radiologists in the armed forces by advance registration, with reduced tariff for the luncheons and banquet. Hotel reservations should be made promptly through the convention manager, Biltmore Hotel, Los Angeles, Calif.

POSTGRADUATE COURSE— MEDICAL TECHNOLOGY

THE Ninth annual postgraduate course in medical technology will be offered at the University of Kansas Medical Center, Kansas City, Kans., on Jan. 6, 7 and 8, 1958. The 37 member guests and K.U. faculty includes the following nationally known instructors:

George E. Cartwright, M.D., Associate Professor of Medicine, University of Utah College of Medicine, Salt Lake City, Utah.

Bradley E. Copeland, M.D., Instructor in Pathology, Harvard Medical School; Senior Scientist, Cancer Research Institute, Boston, Mass.

Robert D. Wise, M.D., Ph.D., Associate Professor of Medicine and Director, Division of Infectious Diseases, Jefferson Medical College of Philadelphia, Pa.

Subjects of current interest in microbiology are presented Jan. 6; hematology is discussed on Jan. 7; and the Jan. 8 program covers clinical laboratory medicine and a chemistry symposium. Panel discussions provide an opportunity for question and answer sessions.

Special emphasis has been placed on the demonstration workshops. Each enrollee will have an oportunity to attend four of the following demonstrations:

Blood banking procedures
Serological techniques
Enteric organisms
Calibration of photometers
Urinary sediment examination
Tissue culture techniques
Medical photography
Paper electrophoresis
Inflammatory activity tests
Coagulation defects
Helminths: laboratory diagnosis
Blood slides
Automatic chemical analyzer
Viruses: laboratory diagnosis
Special tissue stains

The course is open to all who serve in medical laboratories. Enrollment fee for the three days

is $12. Program announcement may be obtained by writing to the Department of Postgradaute Medicine, University of Kansas School of Medicine, Kansas City 12, Kan.

FIFTH INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST

THE Fifth International Congress on Diseases of the Chest, sponsored by the American College of Chest Physicians, will be held in Tokyo, Japan, Sept. 7-11, 1958. The congress will be presented under the patronage of the government of Japan and the Japan Science Council. The congress has been endorsed by the Japan Medical Association.

Scientific papers, panel discussions, fireside conference and motion pictures will be presented on the following subjects:

Radiation hazards
Coronary disease
Occupational diseases of the chest
Benign and malignant chest tumors
Tuberculosis
Cardiopulmonary function studies
Asthma and emphysema
Cardiovascular surgery
Effect of jet air travel in chest disease
Bronchoesophagology
Tropical diseases of the chest
Etiology of lung cancer
Pediatric cardiology
Metabolic disorders
Miscellaneous topics on chest diseases

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SYSTEMATIC ARTERIAL EMBOLISM
by **John Martin Askey**, M.D. 157 pages. Illustrated. (1957) Grune & Stratton. $5.75.

Clearly and concisely, the author adroitly builds a discussion around a current controversial problem. Discussions of current clinical observations on systemic arterial embolism are followed by considerations of pathogenesis, diagnostic, and prophylactic measures, and treatments, both acute and continuous. Pertinent illustrations and a good bibliography add value to a meaty volume.

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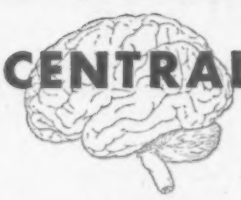

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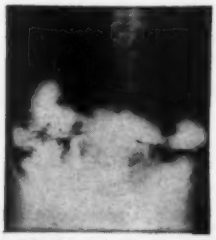

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Phoenix Clinical Club

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE NO. 30

A 46-YEAR-OLD man entered the hospital because of muscular weakness and atrophy.

About eight years before admission, he had noticed the gradual development of weakness and muscular wasting in the hands, associated with rapid, irregular twitchings of the muscles of the shoulders, arms and hands that did not produce movement at the joints. As time passed, the affected muscles became progressively weaker, although he was able to continue his work as a commercial artist. He had also observed, since the onset of the weakness, that sudden or strong movements of the arm or shoulder muscles resulted in a strong, persistent contraction, which failed to relax immediately. At times these spasms were painful, although they usually were not. Occasionally, they occurred in the jaw muscles. Three years before admission, a neurologist found fairly good strength, with minimal wasting in the shoulders, arms and hands. The neck and sternocleidomastoid muscles were considered to be somewhat small, but strong. There was no abnormality of the cranial nerves or the legs. On gripping strongly, he was unable to relax his grasp, but his fingers went into a position of flexion at the metacarpophalangeal joints and extension at the interphalangeal joints for 30 seconds to one minute. Similar persistent contractions could be demonstrated in the deltoid and other arm muscles. The deep reflexes were exaggerated in the arms and at the knees; the abdominal reflexes were active and symmetrical; the plantar reflexes were normal. There were no sensory changes. Quinine, 0.3 gm. three times daily, was prescribed, after which there was great improvement in the muscular spasms. However, the weakness and twitchings became steadily worse. About three months before admission, he had increasing shortness of breath on slight exertion and required two pillows at night. He had otherwise remained in good general health, although he reported a weight loss of about 40 pounds over the previous five years.

At the age of 19, during a world epidemic, he had had a two-month illness called "encephalitis" in which he had headache, was drowsy and yet slept poorly, and felt "nervous." He made a complete recovery from this. He had had no other noteworthy illnesses. The family history was unremarkable.

Physical examination showed a generally thin man, who was using the accessory muscles of respiration. The chest expanded poorly, and no movement of the diaphragm could be demonstrated by percussion. Breath sounds were diminished throughout both lungs. The heart was normal. The remainder of the general examination was not remarkable.

On neurologic examination, he was alert, oriented and co-operative. The eyes, including the pupils, and ocular movements were normal. There was no weakness or atrophy of the tongue, in which there were no definite fasciculations or fibrillation. The neck, shoulder, scapular and arm muscles were moderately weak, and there was severe weakness and wasting of the small muscles of the hands, especially on the right. The muscles of the legs and feet were fairly strong, although not normally so, with greatest weakness distally.

There were widespread, coarse fasciculations in the arms, hands and legs. There was difficulty in immediately relaxing a firm hand grasp and strong extension of the knee against resistance resulted in mild cramps in the quadriceps muscle. The deep reflexes and abdominal reflexes were present and equal; the plantar reflexes were normal. There were no sensory abnormalities.

The temperature was 99°F., the pulse 64 and the respirations 18. The blood pressure was 130 systolic, 70 diastolic.

Examination of the blood and urine were negative. Lumbar puncture gave clear cerebrospinal fluid under a pressure equivalent to 80 mm. of water; the fluid, which contained no cells, had a total protein of 19 mg. per 100 cc. and gave a

colloidal gold reaction of 0001110000 and a negative Wassermann reaction.

An electromyogram, performed with surface electrodes on the quadriceps, hamstring, anterior-tibial and gastrocnemius muscles bilaterally, disclosed spontaneous fasciculations, but normal activity with voluntary contractions. Similar bilateral recordings from the biceps, triceps and flexor and extensor muscles of the wrist revealed fasciculations, most marked in the right biceps and wrist extensor muscles. Voluntary contraction of the right arm showed a failure of relaxation of all muscles lasting 18 seconds. The patient was found dead in bed on the morning of the fourth hospital day.

DR. LESLIE B. SMITH

The diagnostic problem for today concerns a 46-year-old male, who for eight years before his death, suffered from progressive muscular weakness, atrophy, muscular fasciculation, and persistent contractions which failed to release immediately.

The order of progressive involvement of the muscles was; hands, shoulders, jaws, neck, legs, and the muscles of respiration. The muscles of the face, eyes, and the tongue were not affected. There were no sensory disturbances and quinine improved the muscular spasms.

Other than the weakness and the atrophy, the two main clinical findings were fasciculation and myotonia (failure of muscle to release after contraction).

During the course of my reading and in conversation with others, I have tound that the terms fibrillation (fibrillar contractions) and fasciculation (fascicular muscular twitching) in the past were considered to be the same, hence are still erroneously used synonomously. However, particularly since electromyography, these two terms have distinct connotations.

Fibrillation is the spontaneous twitching of muscle fibers with a frequency of two to 30 per second. These contractions are so feeble that they never produce movements at the joints. Fibrillation is habitually present in denervated muscles, hence is called "fibrillation of denervation." It can be seen with the naked eye in the tongue, but in other parts of the body it can not be seen because of the skin. It has been called the "crying" of the muscle for proper nourishment needed for survival. It denotes acetylcholine sensitivity.

The electromyogram, in this case today, failed to show any fibrillation of denervation, hence it should be cafe to conclude, even though fasciculation was such a prominent feature, that he did not have a lower motor neuron disease such as occurs in:

1. Poliomyelitis
2. Progressive spinal muscular atrophy;
   a. Bulbar type
   b. Amyotrophic
   c. Spinal type
   d. Charcot-Marie-Tooth
3. Syringomyelia
4. Syphilitic amyotrophy
5. Intermedullary tumors
6. Traumatic lesions
7. Other diseases of the gray matter of the cord.

Bundle Involvement

Fasciculation is the small involuntary movements visible on the surface of the muscles, rhythmical or irregular, involving not the whole muscle, but only some of the bundles. They are almost always too feeble to produce movements at the joints. They may be seen in normal muscle when it is over-fatigued, or during exposure to cold. Fasciculation, although frequently seen in diseases of nerve degeneration, is an adjunctive and not a pirmary finding. It involves the peripheral portion of the lower motor neuron and may be functional. The wave form and duration is similar to that of the motor units. However, the amplitude is lower and the frequency is about one to three per second. It has been said that for practical purposes fasciculation does not occur in the myopathies or primary muscular dystrophies. However, it has been seen in some cases of myopathy.

An outstanding feature of this case was the delay of the muscles to relax after contraction (myotonia). Myotonia is the inability to relax a muscle normally after its contraction due to repetitive discharges beyond the myoneural junction. Although the mechanism is not thoroughly understood, some believe that it is the opposite of myasthenia gravis.

In the absence of fibrillation and the presence of myotonia, the problem then narrows down to deciding which one of the muscular dystrophies was present.

Progressive muscular dystrophy is the primary degenerative disease of the skeletal muscles. The innervation of the affected muscle is sound, in contrast to the neural and spinal atrophies. The

final proof of the existence of dystrophy is in the demonstration of intact muscle nerves and nerve endings in the presence of severe degenerative changes in the muscle fibers.

The characteristic features of symmetrical distribution of muscular atrophy, the retention of faradic excitability in proportion to the remaining power of contraction, the intact sensibility and preservation of cutaneous reflexes and the liability to heredofamilial incidence serve to set this group of diseases apart on clinical grounds. The case today has all of these qualifications except for known heredity.

The Adams, Denny-Brown, and Pearson clinical classification of muscular dystrophy is:

1. Severe generalized familial muscular dystrophy is a rapidly progressive type of myopathy beginning usually in early childhood, with a strong familial liability, and occurring predominantly in males with or without pseudohypertrophy; the most common type being Duchenne's pseudohypertrophic muscular dystrophy.

2. Mild restricted muscular dystrophy is a slowly progressive proximal myopathy, involving primarily the musculature of the shoulders and often the face, with long remissions and often complete arrest and weak familial incidence. The age onset is two to 60 years. The best known form is facio-scapulo-humeral dystrophy of Landouzy and Dejerine.

3. Progressive dystrophy ophthalmoplegia is a very slowly progressive myopathy involving primarily, and usually limited to the elevators of the eyelids and external ocular muscles.

4. Dystrophia Myotonica (Myotonic Dystrophy or Myotonia Atrophica) is a steadily progressive familial distal myopathy with associated weakness of the muscles of the face and elevators of the eyelids and a tendency to myotonic persistence of muscular contractions, testicular atrophy, and these cases may have cataracts and glandular disturbance.

Welander's Series

Welander has collected a large series of cases without familial cataracts with onset between 30 and 80 years of age. Testicular atrophy, although accepted as a part of dystrophia myotonica, is not always present, also, hypothyroid (Hoffman's syndrome), baldness, and feeblemindedness may or may not be present.

Myotonia congenita (Thomsen's disease) has myotonia as a feature, but does not exhibit dystrophia, hence Adams, Denny-Brown, and Pearson do not classify it as a form of muscular dystrophy. There is still considerable confusion in the classification of Thomsen's disease which I believe is the practical import, in that unequivocal dystrophy features imply a grave prognosis, which is not true in hereditary myotonia (Thomsen's disease.) Only a fourth of the cases are hereditary, hence one can readily conceive of the confusion in the classification of these diseases. Because here is a disease called hereditary, whereas 75 per cent are nonhereditary. Also, in Thomsen's disease, muscular hypertrophy is present.

One author has stated that the classification of the muscular dystrophies is complex and impossible. Also, the primary muscular diseases may at times be indistinguishable from the neurogenic muscular atrophies. This is because in some of the muscular diseases, fibrous scarring may interrupt the lower motor neuron so that some of the muscle fibers may show fibrillation of degeneration. I repeat again, that the case under discussion did not show fibrillation of degeneration, hence must be classified as a muscular dystrophy.

I've had a lot of fun and learned much in trying to pin a specific diagnosis on this case.

Diagnosis: Progressive muscular dystrophy simulating dystonia myotonia, but of the type collected by Welander without familial cataracts or endocrine disorders which actually sets it aside from true dystrophia myotonia (myotonic dystrophy or myotonia atrophica).

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4. Disease of the Muscles—Adams, Denny-Brown, Pearson.
5. Handbook of Differential Diagnosis—Hyman.

PAUL B. JARRETT, M.D.

This case is difficult to fit into a single diagnosis because of the combination of atrophy and fibrillary twitching with myotonia. Since unusual manifestations of several neuromyopathies may be responsible, let us consider the possibilities and, by elimination, reduce those remaining to probabilities.

(1) Syringomyelia is associated with muscular atrophy, trophic changes and spasticity; but is also usually asociaesd as well with sensory loss due to destruction of fibers of pain and temperature as they cross in the grey commissure from cavitation and gliosis.

(2) The next possibility to merit consideration is progressive muscular dystrophy, or the *dys-*

trophies which includes the pseudohypertrophic type, the hypertrophic or Spiller type, the facioscapulohumeral variety and myotonia dystrophica and myotonia congenita. Progressive muscular atrophy usually has its onset at an early age, and there is an absence of fibrillation – a marked feature of this case. Next, myotonia dystrophica, myotonia congenita or myotonia atrophica. These synonyms were once thought to be separate entities, but are now thought to be stages of a degenerative process spread over several generations, appearing as a cataract in the earlier and eventually as the full blown disease in the later generations. The myotonia responds to quinine as did our patient, but the atrophy does not respond to this medicament. In some cases the cataract is slight or absent. This diagnosis is a possibility – usually though, the atrophy involves the muscles of the face, producing the so called "hatchet face." Our patient did not have this manifestation, nor were there any endocrine features such as testicular atrophy, mentioned in the protocol.

Muscular Atrophies

(3) Next we must consider the muscular atrophies which are heredofamilial disorders characterized by interstitial neuritis and degenerative changes in the anterior horn cells. Of these, the ones to consider are: (a) Amyotrophic lateral sclerosis, which in this case is a possibility because in the beginning it is common to find weakness and atrophy of the muscles of the hands which spreads to the forearms and shoulder girdles. Fibrillations are almost always present. However, there is usually evidence of long tract involvement with hyperactive deep tendon reflexes and a positive Babinski sign.

(b) Progressive muscular atrophy has clinical manifestations similar to amyotrophic lateral sclerosis, but without evidence of long tract involvement, and instead of spasticity in the lower extremities, atrophy and weakness may occur with no loss of deep tendon reflexes until quite late. Myotonia isn't necessarily a feature, or this diagnosis would fit the picture very nicely.

Third Stage

(4) The history of epidemic encephalitis 27 years earlier is possibly of significance. I discovered that there is a third stage of this disease, a progressive chronic phase which may be delayed many years from the acute onset. The longest interval I was able to find was 17 years, but since this man's symptoms began eight years previously, that would have made an interval of 19 years from the date of his encephalitis onset. What might the symptoms be? They are stated as being varied and sometimes bizarre. In the epidemic form of Von Economo's encephalitis, extreme variability of symptoms and signs in different patients is common. Some cases, according to my source of information, exhibit rigidity and other hyperkinetic phenomena or tremors, choreo-athetoid, myoclonic and other dyskenetic movements. About 50 per cent of these cases exhibit chronic, often progressive symptoms. It is an interesting hypoothesis for this case.

(5) Myoclonus may be found in the muscles below a lesion within the vertebral canal which impinges on the posterior nerve roots or on the posterior or lateral portions of the spinal cord, especially if the patient is hyperventilated, but cord tumor doesn't seem likely in the absence of long tract involvement.

My choice would be:

1. Progressive muscular atrophy.
2. Myotonia atrophica appearing late in life.
3. Degenerative chronic phase of Von Economo's encephalomyelitis.

DIFFERENTIAL DIAGNOSIS

Dr. John Walton: This interesting case, like all those discussed in this amphitheater, presents certain inconsistencies and difficulties in diagnosis.

There were three striking clinical features: progressive atrophy of the limb musculature, particularly in the upper limbs and always most severe in the distal part of the extremities; widespread muscular fasciculations; and cramps provoked by movement and associated with difficulty in relaxation of muscles, particularly those controlling the grip. I think it would be as well to consider each of these salient features of the story individually to determine what produced them.

Muscle atrophy was mainly peripheral, was much less severe proximally and in the late stages involved the diaphragm and perhaps the intercostal muscles. Such muscular atrophy could have resulted from disease in the anterior-horn cells, in the spinal anterior nerve roots, in the peripheral nerves or in the muscles themselves. Motor-neuron or motor-system disease, which immediately springs to mind as the probable cause of this clinical picture, is probably a single entity although it may be manifested in three

distinct clinical forms. The first is the progressive muscle atrophy of Aran and Duchenne; the second and most common is amyotrophic lateral sclerosis, with atrophy of muscles in the upper limbs and spasticity in the lower; and the third is progressive bulbar palsy, in which the atrophy and motor weakness usually begin in muscles supplied by the medulla or bulb. The picture of progressive peripheral muscular wasting with widespread fasciculations in this patient is characteristic of progressive muscular atrophy, but the brisk tendon reflexes in the lower limbs suggest an element of lateral sclerosis. One slight inconsistency is the eight-year history, since many patients fail to survive so long. The disease is often fatal within two to six years of the onset. On the other hand, Muller, in a recent study of this disease, found that some patients survived for 15 years, so that this certainly does not rule out the diagnosis.

One possible cause of nerve-root disease in such a case is carcinomatosis involving the meninges, with widespread infiltration of anterior roots and spinal nerves, and this may give rise to a progressive peripheral atrophy. The same statement is true of cervical spondylosis (multiple disk degeneration in the cervical spine), which may result in pressure on multiple roots, causing atrophy in the muscles of the upper limbs, and at the same time may compress the spinal cord, giving increased reflexes and sometimes spasticity in the lower limbs. Of course, inflammatory disease of the meninges, like meningovascular syphilis, may involve nerve roots in the cervical region and also the cord, giving the picture of syphilitic amyotrophy. I think the negative spinal fluid findings rule out several of these diagnoses, and in fact a number of other points, which I shall discuss in a moment, make any of them unlikely.

Peripheral Nerves

Turning now to the peripheral nerves, I wonder if this could have been a polyneuropathy, of which there are multitudinous causes. The absence of sensory loss in this case is very much against the commoner types of polyneuropathy, but, on the other hand, we sometimes see cases of polyneuropathy that are entirely motor and show no sensory changes whatever. There is no doubt that this picture could have been caused by a predominantly motor type of peripheral neuropathy.

Finally, we come to the muscles. A disease of the myoneural junction like myasthenia gravis could not conceivably produce this clinical picture. Could the condition have been a muscular dystrophy or myopathy? The commonly occurring types of muscular dystrophy usually begin in the proximal muscles of the limbs and only in the late stages do they spread to involve the more distal muscles. This, however, is not true of the very rare distal myopathy described by Gowers and, more recently, by Welander in Scandinavia, but in distal myopathy, fasciculation of muscles is virtually unknown and certainly is never so gross as that seen in this case. Cases of muscular dystrophy of all types practically never show fasciculations. Another heredofamilial myopathy, myotonic dystrophy or dystrophia myotonica, is characterized by myopathic muscular wasting and weakness in the peripheral muscles of both upper and lower limbs, but this disease is always associated with involvement of the sternocleidomastoid, temporal and masseter muscles, and with myotonia, or difficulty in relaxation of grip. Furthermore, there are usually endocrine disturbances in these patients; the males have frontal baldness and gonadal atrophy. Another characteristic and almost invariable feature of dystrophia myotonica is cataract. Apparently, in the case under discussion, the eyes were normal. Futhermore, in all cases of dystrophia myotonica there is some involvement of facial muscles; in this patient the face was normal. For all these reasons I do not think that this was dystrophia myotonica, although the muscular cramps and the failure to relax the grip were very suggestive of myotonia.

Other Causes

Could this have been thyrotoxic myopathy or some other myopathy of metabolic cause? Apart from the weight loss of 40 pounds in five years, which, although somewhat severe, could have been a result of the muscular wasting, there was no evidence of thyrotoxicosis. Sometimes, the myopathy of thyrotoxicosis precedes the other manifestations by a number of years, but I should think that after eight years there would have been some other manifestations of this disease, and certainly none were mentioned in the protocol. In thyrotoxic myopathy, too, atrophy and weakness of muscles are most often proximal; furthermore, fasciculations are rare, although they have been described. I think I can dismiss polymyositis or dermatomyositis very quickly. This is practically always a disease of the proxi-

mal muscles. In some cases there is minimal and in others severe skin involvement; fasciculations are very rare. To me this clinical picture is not at all like that of polymyositis.

Although fasciculation in muscle has been proved to be a phenomenon that arises peripherally, because it persists after blocking or section of the motor nerve, it is undoubtedly true that most patients with widespread fasciculations are proved to have disease of the anterior-horn cells. As I have mentioned already, this phenomenon is seen most clearly and frequently in patients with progressive motor neuron disease—amyotrophic lateral sclerosis, progressive muscular atrophy and progressive bulbar palsy. However, it is occasionally seen in other conditions that may damage the anterior-horn cells, such as syringomyelia, peripheral neuropathy and cervical-disk disease, but it is not usually so marked and widespread as in this case. Fasciculation in muscles may be benign and widespread and is frequently discovered in medical students and medical practitioners who happen to notice that their muscles are twitching. A diagnosis of myokymia has been applied to this condition of widespread benign fasciculations, in which, however, the fasciculations tend to involve two or three motor units, not a single motor unit, and clinically are much coarser than those in motor-neuron disease. The fact that I am discussing the case here today is very good evidence that this was not a benign disorder.

Lastly, I shall consider the muscular cramps and the impaired ability to relax the muscles after a strong grip or after a forceful movement. These were powerful, sustained contractions, which were invariably initiated by voluntary movement and did not occur spontaneously; the description was absolutely characteristic of myotonia. As described, these cramps were not those seen in tetany, salt depletion, hypocalcemia, or hypoparathyroidism. They were not like the aching, nagging pains resulting from the extrapyramidal rigidity of muscles in Parkinson's disease, nor were they like the sharp cramps and the flexor and extensor spasms that one sees in patients with disease of the pyramidal tracts and spasticity. None of these seem to fit the description that we are given in this case; the only one that would explain the clinical findings is myotonia. I do not think that this was a so-called myotonoid disturbance, the slow lethargic failure to relax muscle usually seen in the large, bulky muscles of patients with Hoffmann's syndrome—in other words in cases of myxedema with muscle involvement. Some patients with myxedema have large, bulky muscles, which tend to be painful and the seat of nagging cramps; relaxation in these muscles is often impaired. Fasciculations would not be expected in Hoffmann's syndrome, and certainly the other findings in this case rule out any suggestion of myxedema. Relief by quinine is also very characteristic of myotonia. Although quinine may often relieve muscular cramps from whatever cause, the relief is usually most striking in patients with myotonia. For this reason, I think that I should have to conclude that the phenomenon that this patient showed was true myotonia. Was the failure to relax the grip made worse by cold?

Colloquy

Dr. Edward P. Richardson Jr.: We do not have sufficient information to answer that question.

Dr. Walton: Did the patient have a test of the basal metabolic rate, or recent calcium and phosphorus determinations?

Dr. Richardson: No.

Dr. Walton: Before attempting to correlate the muscular atrophy, fasciculations and cramps —this apparently myotonic phenomenon—I shall look briefly at the other findings. There was a previous history of encephalitis, which seems clearly to have been encephalitis lethargica. A number of cases of amyotropic lateral sclerosis occurring as a sequel to epidemic encephalitis have been reported; however, in most of these there was evidence of Parkinson's disease as well as the manifestations of motor-neuron disease. Furthermore, the latent period is not usually so long. In this case it was 27 years before the muscular atrophy began. This relation was recently discussed very fully by Greenfield and Matthews, who reported two cases of amyotrophic lateral sclerosis occurring as a sequel to epidemic encephalitis, but both patients had postencephalitic Parkinson's disease; they referred to other cases in the literature in which there had been no evidence of Parkinson's disease, but simply the picture of amyotrophic lateral sclerosis, apparently as a sequel to encephalitis.

The investigations in this case were never of any great help. The cerebrospinal-fluid examination excluded any of the more active forms of polyneuropathy, in which the protein is usually raised, and the electromyogram simply con-

firmed the presence of fasciculations. Will you tell us about the electromyogram, Dr. Schwab?

Dr. Robert S. Schwab: The examination showed numerous fasciculations, some large, some small and some series of identical-sized ones. Throughout the record there were continual discharges of this type in the legs and arms. These examinations were all done on the ink writer by surface electrode, and I cannot find any evidence that cathode-ray studies were done. When the patient contracted the flexor muscles of the wrist and then was told to relax, he was unable to do so; the contractions continued for 18 seconds and then began to disappear. This is the myotonia response.

Dr. Walton: It is unfortunate that a needle electrode study was not done because in such a patient one might expect to find not only spontaneous fasiculations, but also spontaneous fibrillation or spontaneous contraction of single muscle fibers as distinct from motor units, a phenomenon that is probably seen only in denervated muscle. It would also have been interesting because a needle electrode study in case of true myotonia shows a characteristic myontonic discharge—chains of oscillations of high potential waning slowly and giving a characteristic sound in the loud speaker rather like that of a dive bomber.

Finally, I must try to correlate the different findings in this case. The great difficulty is to reconcile on the one hand muscular atrophy and fasciculations, which are characteristic of motor-neuron disease, particularly when associated with increased reflexes in the lower limbs, and on the other hand the muscle cramps and delayed relaxation, which are very suggestive of myotonia and for which I can think of no other explanation. Classic myotonia occurs only under two circumstances(in myotonia congenita (Thomsen's disease) and in dystrophia myotonica. In patients with myotonia congenita this phenomenon is usually present from birth, affects all voluntary muscles, is made worse by cold and is relieved after the patient has moved about for a while. These cases run an essentially benign course. I cannot believe that this patient had myotonia congenita that did not appear until the age of 46. Dystrophia myotonica may be excluded for reasons already given.

First Described In 1892

A condition of myotonia of acute onset in adult life was described first by Talma in 1892 and called myotonia acquisita. Thomsen, who recently wrote a monograph on myotonia, has discussed this condition in great detail and has come to the conclusion that all Talma's patients were suffering from myotonia congenita, dystrophia myotonica or Hoffmann's syndrome — namely, myxedema, with muscle involvement. Many people now believe that myotonia acquisita is not a distinct entity. Hence, I do not believe that this was a case of myotonia acquisita, and as I have already mentioned the clinical picture was not like that of polyneuritis or thyrotoxic myopathy.

My conclusion must be that this was an exemple of progressive motor-neuron disease, probably of the type of amyotrophic lateral sclerosis, in which symptomatic myotonia occurred. Recently, there has been a report by Worster-Drought and Sargent of reactive myotonia in cases of polyneuritis; Worster-Drought mentioned in that paper that he had seen active myotonia in a patient with Charcot-Marie-Tooth disease or peroneal muscular atrophy. The authors' explanation for this phenomenon was that the muscles in a state of partial denervation became hyperirritable and so gave rise to the phenomenon of myotonia; this does, however, seem to be a very facile explanation. I shall nevertheless have to conclude that a similar symptomatic or reactive myotonia occurred in this case.

Dr. Benjamin Castleman: Dr. Fisher, would you like to comment on this case?

Dr. C. Miller Fisher: One clinical point that was not touched upon is that the patient was found dead in bed, and I wonder if Dr. Walton would like to comment on that?

Dr. Walton: I did not comment on that because I had taken so much time. The diaphragm was involved, and I believe that he probably had hypostatic pneumonia. I cannot give any other explanation. The sudden death could have been cardiac, but I cannot think that it was related to the muscle disease except so far as he had severe involvement of the muscles of respiration and presumably some degree of respiratory failure.

CLINICAL DIAGNOSES

Bulbar palsy.
Dystrophia myotonica.

DR. JOHN WALTON'S DIASNOSIS

Amyotrophic lateral sclerosis, with symptomatic myotonia.

ANATOMICAL DIAGNOSIS

Progressive muscular atrophy.

PATHOLOGICAL DISCUSSION

Dr. Castlemen: Autopsy did show an acute tracheobronchitis with a great deal of pulmonary congestion; that is all we found as a cause of death. I shall ask Dr. Richardson to discuss the central nervous system findings.

Dr. Richardson: Dr. Walton has given us an illuminating discussion of the various clinical phenomena that occurred in this case and of the diagnostic possibilities. He was puzzled by the occurrence of classic myotonia in what was otherwise a case of progressive muscular atrophy. This feature also stood out prominently in the minds of the clinicians who saw the patient during life. On pathological examination we found that this was a case of motor-neuron degeneration entirely consistent with the chronic, progressive disease of the motor system that Dr. Walton has discussed. The disease appeared to affect principally the anterior-horn cells of the spinal cord, with minimal involvement of the cranial-nerve motor nuclei. Myelin stains of the cord failed to demonstrate any involvement of the lateral corticospinal tracts, so that perhaps the exaggerated tendon reflexes that were described in the first examination were not significantly exaggerated. Cell stains showed widespread disappearance of anterior-horn cells at all levels in the spinal cord, and most of the few that remained appeared diseased—in that they were pale, or dark and shrunken. There were typical reactive changes in the astrocytes and microglia in the affected regions. As could have been expected, there was secondary degeneration in the anterior roots. All these phenomena indicate a chronic destructive process. Parts of the cord other than those specifically affected were intact, and there were no significant changes elsewhere in the nervous system. Representative scetions of skeletal muscles demonstrated findings typical of denervation atrophy, with groups of small muscle fibers, corresponding to diseased motor units, interspersed among groups of fibers of normal size, of which the motor-nerve supply had not been affected. This case must be classified as progressive muscular atrophy rather than amyotrophic lateral sclerosis, because of lack of pyramidal-tract involvement.

A Physician: Does Thomsen's disease and other diseases in which there is myotonia show anything in the muscles?

Dr. Richardson: Thomsen's disease (myotonia congenita) shows nothing that can be recognized as histologically abnormal in the muscle other than some distortion of fibers that may be artifacts due to the abnormal contractility. The muscles in cases of dystrophia myotonica show changes very closely resembling those of progressive muscular dystrophy, which are different from what we find in cases such as this.

100,000 EMPLOYED ON ATOMIC PROJECTS

A handbook issued by the U.S. Office of Education shows a work force totaling 100,000 now is employed on atomic energy projects in the United States, ranging from missiles to medical research. Among other facts, the booklet lists shipment of 12,585 packages of radioisotopes to 2,360 institutions in every state and to 46 foreign countries in 1956. Universities, hospitals and research institutions now have about 400 research contracts with the Atomic Energy Commission in medicine and other "life sciences," and another 400 contracts are in effect in the physical sciences. Atomic energy products were described as useful in the study of anemia, arthritis, cancer, diabetes, heart disease, leukemia, mental diseases, nervous diseases and some chornic illnesses.

NIH ALLOCATES $46 MILLION IN GRANTS FOR MEDICAL RESEARCH

NATIONAL Institutes of Health has allocated $46 million in research grants, or 46 per cent of the $99 million appropriated for the fiscal year ending next June 30. A total of 478 non-federal institutions share in the 3,325 grants, with more than two-thirds of the money going as continuation grants or supplements and the remainder for new projects.

Totals by institutes: Cancer, 384 grants for $5.9 million; heart, 62 grants for $9.6 million; allergy and infectious diseases, 620 grants for $7.6 million; arthritis and metabolic diseases, 579 grants for $7.1 million; dental, 105 grants for $968,000; mental health, 189 grants for $3.9 million; neurological diseases and blindness, 357 grants for $4.7 million; general, 449 grants for $5.9 million.

Woman's Auxiliary

MEDICAL AUXILIARY

By Mrs. M. W. Phillips, President-elect,
Auxiliary to the Arizona Medical Association

REPORT OF CHICAGO CONFERENCE

THE three-day annual conference of state presidents, presidents-elect, and national committee chairmen held at the Drake Hotel in Chicago was a potent capsule. Pertinent, vital information was relayed freely and authoritatively by a wealth of resource persons representing not only the American Medical Association, but other national organizations.

"Discussion Group Procedure and Role-Playing" as directed by Martin P. Chworowsky, Ph.D., director of the Greenfield Center for Human Relations, University of Pennsylvania, was the media used to make the entire conference program palatable to approximately 130 enthusiastic delegates. Carrying out the auxiliary theme, "Health is a Joint Endeavor," the group discussion method was used as an effective means of strengthening the individual through the group.

The national program of the auxiliary to the AMA was offered with encouragement to interpret it as how the state and local levels can do their own thinking. However, reminded that in a democracy citizens have the right to their own interest only as it does not conflict with the overall good of everyone, county auxiliaries are urged to fit their programs into those of state and national. In effect, the auxiliary standards are set, but the qualities of the individual are necessary to carry out the program.

An AMA roundup, presented by E. B. Howard, M.D., assistant secretary, informed the delegation of latest developments in the Forand bill, HR 9467, proposed amendment to the Social Security Act. This bill is designed to purchase hospital, surgical, and nursing home care for any of the 13 million eligible recipients of Old Age Survivors Insurance and is considered more serious to the profession and the nation than previous bills because it changes social security by providing *service* benefits requiring governmental control, supervision, and regulation. Hospitals would have contracts with the government to receive payments; only board men would be permitted to do surgery except in emergency cases; and the surgeons' fees would be set. We can help fight the Forand bill by knowing the facts and writing personal letters to our legislators telling why we oppose HR 9467.

Dr. Howard also reported that probably the second biggest problem to the AMA is the encroachment of third parties, particularly the unions, who are building their own hospitals and hiring panels of physicians, consequently narrowing the field of activity of the independent doctor. The steel workers are considering this move following in the direction of the United Mine Workers.

Results of the management survey will be changes to make AMA better co-ordinated and increase efficiency. A general manager has been hired, and possible extensive remodeling of the headquarters building interior is pending.

The question of covering physicians by social security remains controversially on the horizon. Dr. Howard announced that AMA is firmly opposed to compulsory coverage and emphasized the importance of each physician knowing all the facts before forming an opinion.

Services of a new managing editor have been acquired for Today's Health. Jim Liston, formerly with Better Homes and Gardens, will replace W. W. Bauer whose many assignments have made it impossible for him to devote full time to the magazine. Forthcoming innovations include new features and a startling new cover. The prime goal for Today's Health is still "a copy in every doctor's office."

Recruitment activity was highlighted with the suggestion that emphasis be placed in whichever allied medical fields would meet local needs. Auxiliaries are urged to work with career groups in conducting this phase of the program.

The urgent necessity of American Medical Education Funds was discussed and continuation of fund raising ideas and promotion encouraged.

Civil defense authorities warned that when we need civil defense, it's too late to start the planning. Working with other civil defense groups was advised for better effectiveness, and in addition to emergency reaction planning, atten-

tion was focused upon knowing one's blood type.

David B. Allman, M.D., president of AMA, prescribed a dose of care mixed with what we say and do as doctors' wives. In complimenting the whole auxiliary program, he maintained that our "greatest angle" is still public relations and that our actions, good and bad, reflect directly upon our husbands. We remain their only salesmen; so let's appraise the impressions we create.

Concern was expressed at the growing tendency of the American character changing from that of a self-directed to a conformist people. This alarming trend is shown not only in the thinking of mature citizens, but also in results of tests given to teenagers and undergraduate students. The danger of losing sight of the national ideals that made America great is present in the slipping away from liberalized education in all fields. We each need to be jolted into evaluating all the facts before making decisions. Scientific studies and fact-finding groups are essential to intelligent and practical judgments made by the individual. As related to the auxiliary, our joint endeavors are needed to work on problems that can be successful only if everyone contributes in her own way. Whether you play the role of leader, elaborator, co-ordinator, evaluator, energizer, compromiser, or harmonizer, remember that it takes all kinds, and there is a definite place in the auxiliary for you.

AEC MEDICAL COMMITTEE SAYS WEAPONS TESTS SHOULD CONTINUE

A six-man advisory committee on biology and medicine has informed the Atomic Energy Commission that necessary tests of thermonuclear weapons are justified despite radiation hazards. The group thus sides with the AEC in a debate that has been the subject of lengthy congressional hearings and is expected to continue in the next session. Comments the group: " . . . if we wish to maintain a first class military organization for the safety of the country, we must at least keep abreast of new weapons development. . . "

The committee concedes, however, that tests must be kept within reasonable bounds, particularly when more nations decide to conduct their own tests. "In time the situation may well become serious . . . The question arises in the minds of many thoughtful persons whether the number and power of bombs exploded in tests are being kept at the minimum consistent with scientific and military requirements."

The committee made some estimate of maximum damage to be expected from the annual detonation of atomic explosives equal to the average of all tests held in the last five years. They included leukemia, an increase of 160 deaths and possibly another 36 deaths over current rate of 11,400; birth of handicapped children, an increase of from 160 to 800 above the present rate of 80,000 a year in the U.S.; shortening of life, a few days at the worst; bone cancer, possibly no effects at all in a lifetime.

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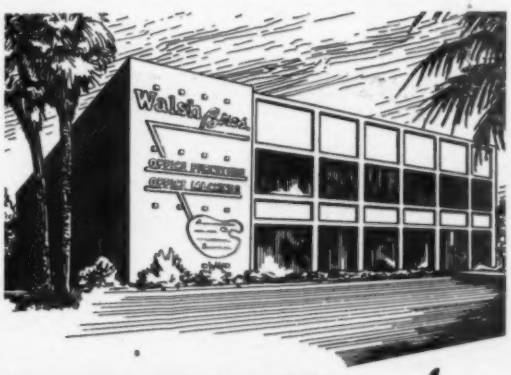

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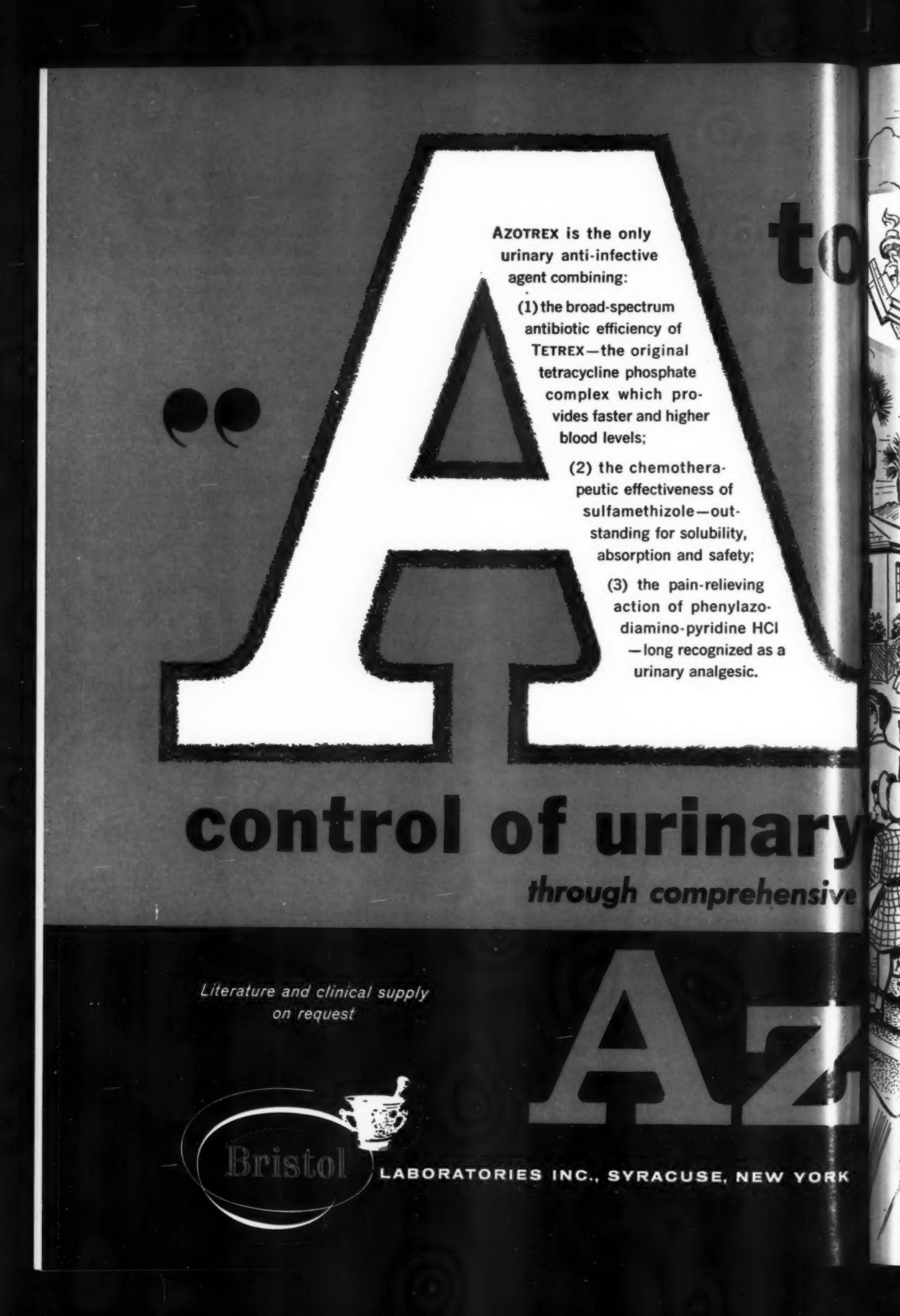
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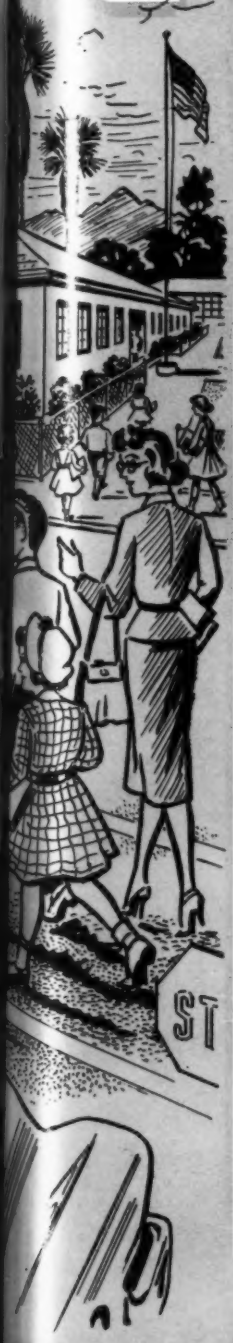

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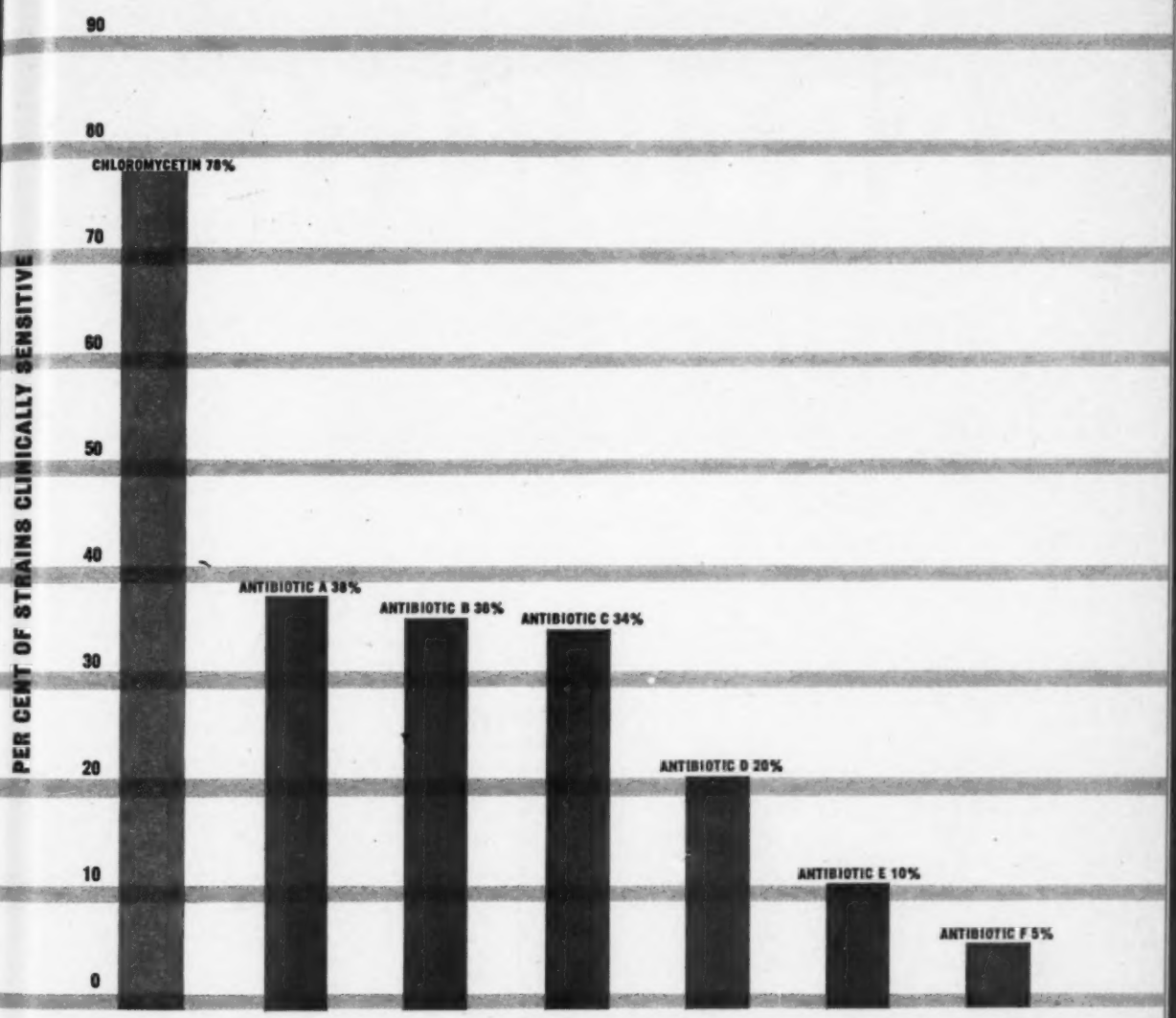

*This graph is adapted from Waisbren and Strelitzer.[15] It represents *in vitro* data obtained with clinical material isolated between the years 1951 and 1956. Inhibitory concentrations, ranging from 3 to 25 mcg. per ml., were selected on the basis of usual clinical sensitivity.

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Cohen and Calkins[6]	22	17	3	2
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- Arthritis associated with lupus erythematosus or psoriasis

THEORY OF ACTION:

Aralen appears to suppress or induce remission of rheumatoid inflammatory processes by inhibiting adenosinetriphosphatase.

HOW SUPPLIED:

Aralen phosphate: 250 mg. tablets in bottles of 100 and 1000.
125 mg. tablets in bottles of 100.

Tolerance:

Aralen is usually well tolerated. Toxic effects are usually mild and to date have been transitory in nature, disappearing completely either on continuance or cessation of therapy or on reduction in dosage.

Gastrointestinal disturbances (e.g. nausea, rarely vomiting, diarrhea, abdominal cramps, anorexia) are frequent manifestations of intolerance. Temporary blurring of vision (due to interference with accommodation) is also relatively frequent.

Pleomorphic skin eruptions (e.g. lichenoid, maculopapular, purpuric), although generally mild, may preclude the use of an optimum dosage schedule. If a skin reaction persists on a reduced dosage schedule, or recurs after reinstitution of treatment with gradually increasing doses, discontinue Aralen till the lesion again disappears and consider resuming treatment with Plaquenil® (brand of hydroxychloroquine).

Less frequently transitory vertigo, headache, lassitude, or neurological disturbances, such as nervousness, irritability, emotional change, and nightmares have been reported. Instances of unexplained slight gradual weight loss as the patient's general health and arthritic condition improved have been mentioned. Occasional instances of bleaching (depigmentation) of the hair have been described.

Although an occasional instance of leukopenia, with normal differential count, has been reported (WBC about 3000), it has not proved troublesome because it has always been reversible on discontinuance, or diminution of the dose. Even spontaneous reversal may occur while full dosage is maintained.

Caution:

Aralen is known to concentrate in the liver and, although hepatic damage has never been reported, the drug should be used with caution in the presence of liver disease. In the presence of severe gastrointestinal, neurological, or blood disorders, the drug should be used with caution or not at all. If such disorders occur during the course of therapy, the drug should be discontinued. Concomitant use of gold or phenylbutazone with Aralen should be avoided because of the tendency of these agents to produce drug dermatitis.

Clinical Comments:

Of fifty patients receiving Aralen therapy, "43 have become really well; that is, they have no stiffness, and any pain that occurs can reasonably be attributed to use of joints affected by secondary degenerative changes. They have no evidence of joint inflammation, but may have a raised erythrocyte sedimentation rate. They have little or no need for analgesics." *Freedman*[3]

"One hundred and twenty-five private patients have been carefully followed clinically and haematologically while receiving well over 200 patient-years of chloroquine [Aralen] therapy. The results are considered good in 70%, one-half of these cases being in remission. Improved work performance, sedimentation rate, and hemoglobin levels paralleled the major objective gain in this 70%. 90% of them remained on chloroquine [Aralen] therapy, half for more than two years. Classical peripheral rheumatoid arthritis, spondylitis, arthritis of juvenile onset, and rheumatoid disease with psoriasis, all appeared to respond about equally well.

"It is suggested that chloroquine comes closer to the ideal for long-term, safe, control of rheumatoid disease than any other agent now available." *Bagnall*[4]

"Out of the 36 rheumatoid arthritis cases we treated . . . favorable results were obtained in 32 cases. *Bruckner et al.*[5]

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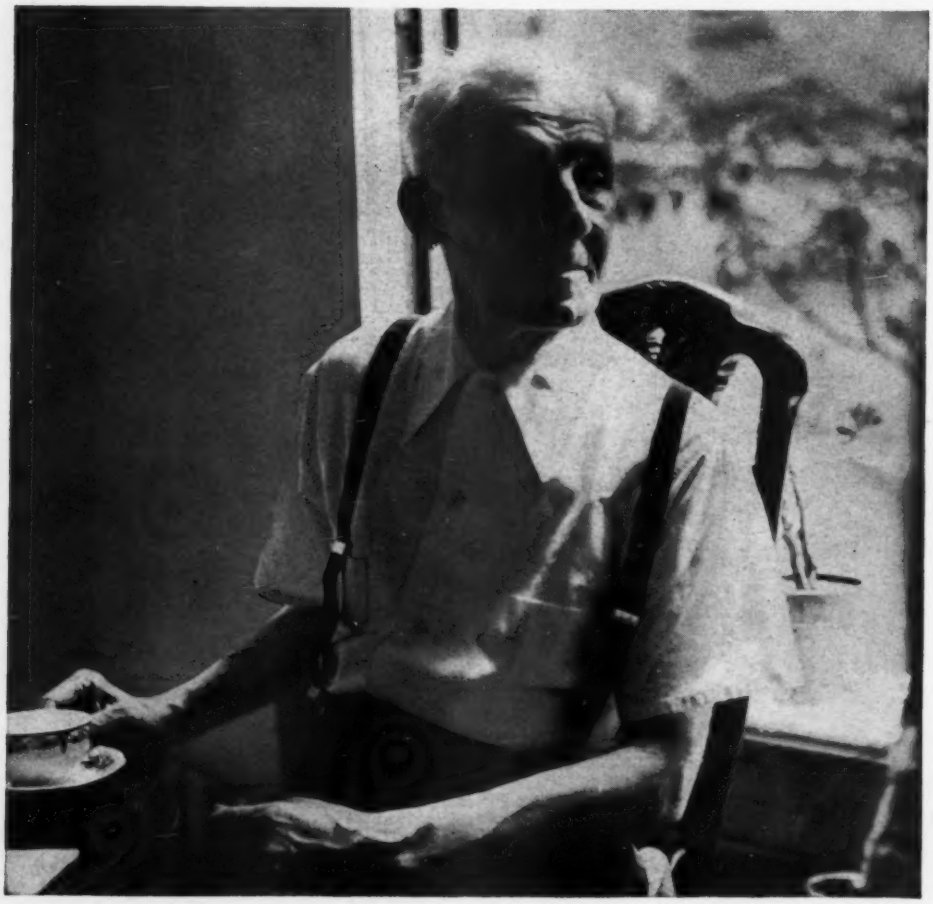

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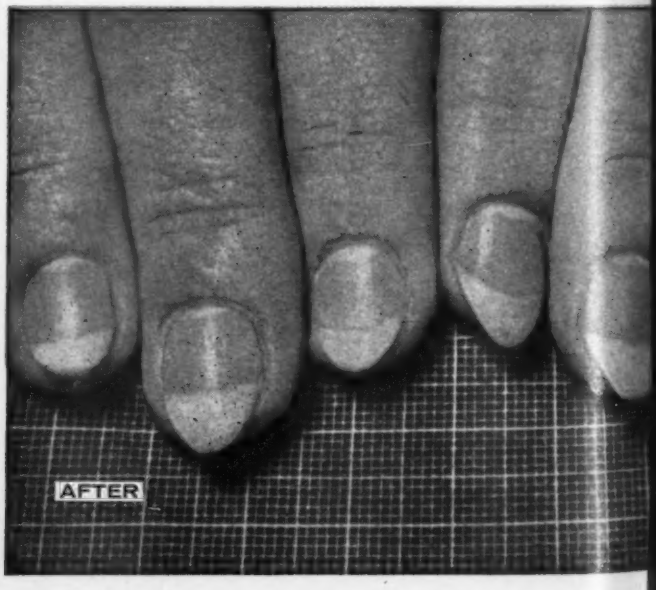

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Evidence continues to accumulate verifying the effectiveness of Gelatine in the treatment of brittle fingernails. Investigators report that the nails show objective evidence of improvement.[1,2,3,4] Furthermore, patients often volunteer that their nails "feel stronger," "look smoother," and "I can pick up things without them hurting."[1] Evidently the subjective sensations associated with improvement are nearly as important to some patients as the positive physical change in the nails' appearance.

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Response to Gelatine in Brittle Fingernails

References	Dosage	Duration of treatment	No. patients w/ brittle nails	No. patients improved	No. patients w/ brittle nails and other pathology	No. patients improved
1. Rosenberg, S., Oster, K. A., Kallos, A. and Burroughs, W.: *A.M.A. Arch. Dermat* 76:330, (September) 1957	7 Gm./day	3 months	50	43 (86%)	32[a]	9
2. Schwimmer, M. and Mulinos, M.G.: *Antibiot. Med. & Clin. Therapy* 4:403, (July) 1957	7.5 Gm./day	11-16 weeks	18	15 (83%)		
3. Rosenberg, S. and Oster, K. A.: *Conn. State Med. J* 19:171, (March) 1955	7 to 21 Gm./day	15 weeks	36	26[b] (72%)		
4. Tyson, T. L.: *J. Invest. Dermat.* 14:323, (May) 1950	7 Gm./day	13 weeks	12	10[c] (83%)		
Totals	7-21 Gm.	11-16 weeks	116	94 (81%)	32	9 (28%)

a. Gelatine improved psoriatic nails in 5 out of 12 cases. In onychomycosis and other pathological conditions of the nail it was of no appreciable help.

b. Of the failures, 2 had congenital disease of the nails, 3 were diabetics and 3 took the medication for less than one month.

c. One patient with psoriasis and arthritis and one patient with psoriasiform nail changes showed improvement in 2 and 3 months respectively.

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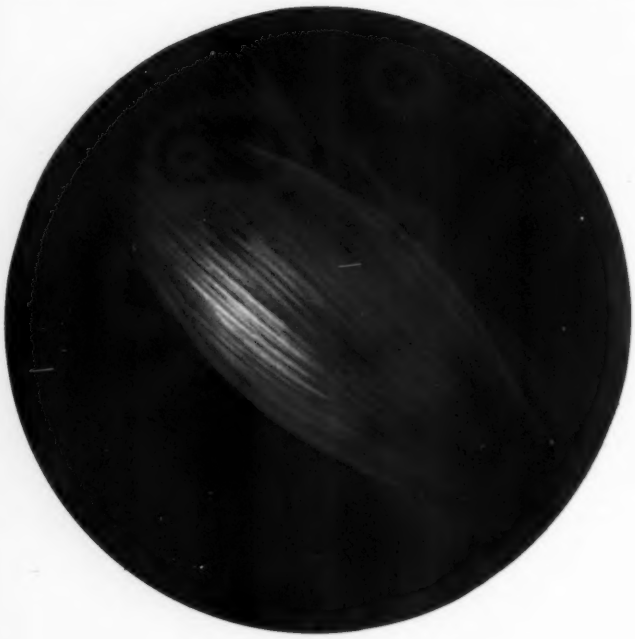

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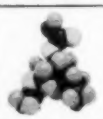	DISCOVERED & INTRODUCED BY
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CM-509-R

in acne

"results were uniformly encouraging"[1]

pHisoHex® *Sudsing, nonalkaline antibacterial detergent—nonirritating, hypoallergenic.*

The acne skin that is "surgically clean" is the one most likely to clear completely. Hodges[1] found that standard acne treatment usually results in "mediocre success" for most patients. *The addition of pHisoHex® washings to standard treatment produced results that far excel any obtained previously.*

pHisoHex, a powerful antibacterial skin cleanser containing hexachlorophene, removes oil and virtually all the bacteria from the skin surface.

For best results prescribe from four to six pHisoHex washings of the acne area daily.

1. Hodges, F. T.: GP, *14*:86, Nov., 1956.

pHisoHex, trademark reg. U. S. Pat. Off.

Winthrop LABORATORIES
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The many thousands of patients successfully treated with Signemycin* over the past year have confirmed the value of this safe and effective antibiotic agent. One further therapeutic resource is thereby provided the practicing physician who is faced daily in office and home practice with immediate diagnosis of common infections and the immediate institution of the most broadly effective therapy at his command, in his continuing task of the ever-extending control over human pathogens.

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Now buffered to produce higher, faster blood levels; specify the V form on your prescriptions.

Supply: SIGNEMYCIN V Capsules, 250 mg. Signemycin Capsules, 250 mg. and 100 mg. Signemycin for Oral Suspension, 1.5 Gm., 125 mg. per 5 cc. teaspoonful, mint flavor. Signemycin Intravenous, 500 mg. vials and 250 mg. vials, buffered with ascorbic acid.

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"Eighty-seven patients with various infections of the skin were treated over a period of six weeks with [Signemycin]. Excellent or good results were achieved in sixty-seven, including eleven of twenty-two patients refractory to other antibiotics."

Lewis, H. H.; Frumess, G. M., and Henschel, E. J.: Rocky Mountain M. J. 54:306 (Aug.) 1957.

"Results of treatment with oleandomycin-tetracycline of 50 infections [mostly respiratory] due to resistant organisms and 40 infections [respiratory, skin, urinary infections] due to sensitive organisms are very encouraging. In some of these patients, [Signemycin] was lifesaving, and in others surgery was made unnecessary. This confirms other reports."

Sabin, H.: Antibiotic Med. & Clin. Therapy 4:174 (March) 1957.

Based on case reports documented by independent investigators in 26 countries abroad, the clinical response obtained with Signemycin in 1404 patients with a wide variety of infections was successful in 1329 patients; in 13 cases only was it necessary to discontinue therapy because of side effects.

Report on 1404 Cases Treated with Signemycin: Medical Department, Pfizer International. Available on request.

In 50 nonselected patients, Signemycin "...appears to be effective in the treatment of most general surgical infections, including virulent staphylococcus aureus infections. In some cases these infections had been clinically resistant to other antibiotics. The drug is apparently well tolerated."

Levi, W. M., and Kredel, F. E.: J. South Carolina M. A. 53:178 (May) 1957.

Of 50 patients with various infectious processes, 26 had not responded to previous antibiotic therapy. With Signemycin "Ninety-six per cent of the mixed infections were clinically controlled. . . . and in none of the cases was there any reason to discontinue the drug."

Winton, S. S., and Chesrow, E.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 55.

Signemycin in 79 patients with severe soft tissue infections: "The average response of these cases was excellent and inflammatory symptoms subsided with almost uniform rapidity....The magnitude and incidence of surgical intervention was reduced....Side reactions were minimal. . . ."

LaCaille, R. A., and Prigot, A.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 67.

Five groups of patients (total 211) with acne were treated with one of five antibiotic agents, including Signemycin (55 cases). "The results were evaluated taking into consideration the usual response to such conservative conventional therapy and the rapidity of response." In 8 weeks, Signemycin rapidly attained and maintained the highest percentage of efficacy of antibiotic agents tried.

Frank, L., and Stritzler, C.: Antibiotic Med. & Clin. Therapy 4:419 (July) 1957.

In the treatment of 78 patients with tropical infections, some complicated by multiple bacterial contamination or present for years, Signemycin was found to be "...an exceptionally effective agent," requiring smaller doses and less extended periods of therapy than with the tetracyclines alone, and "caused no notable toxic reactions."

Loughlin, E. H., and Mullin, W. G.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 63.

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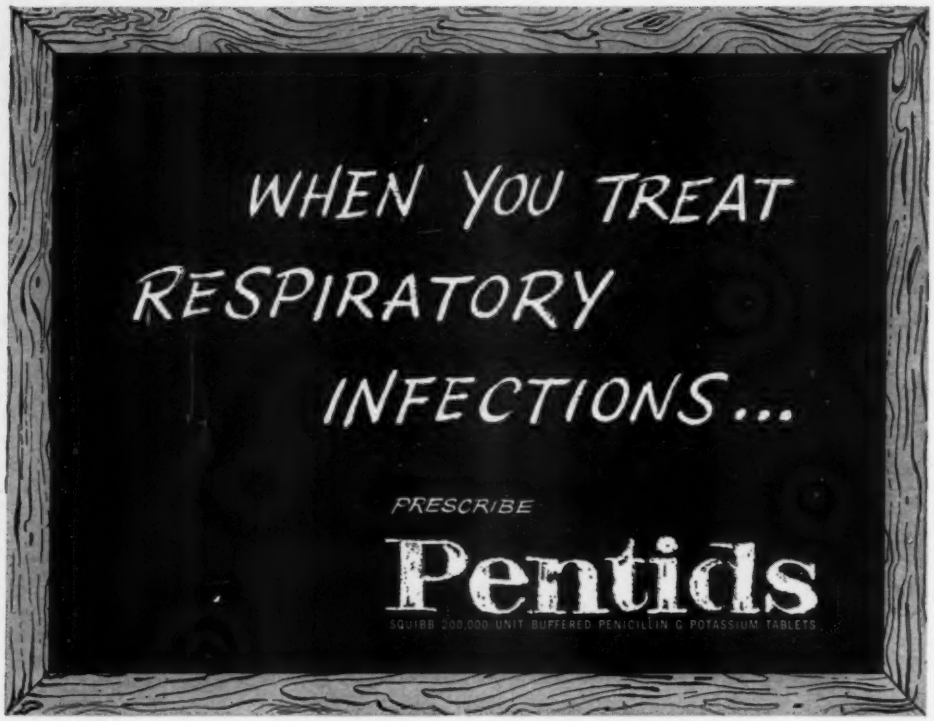

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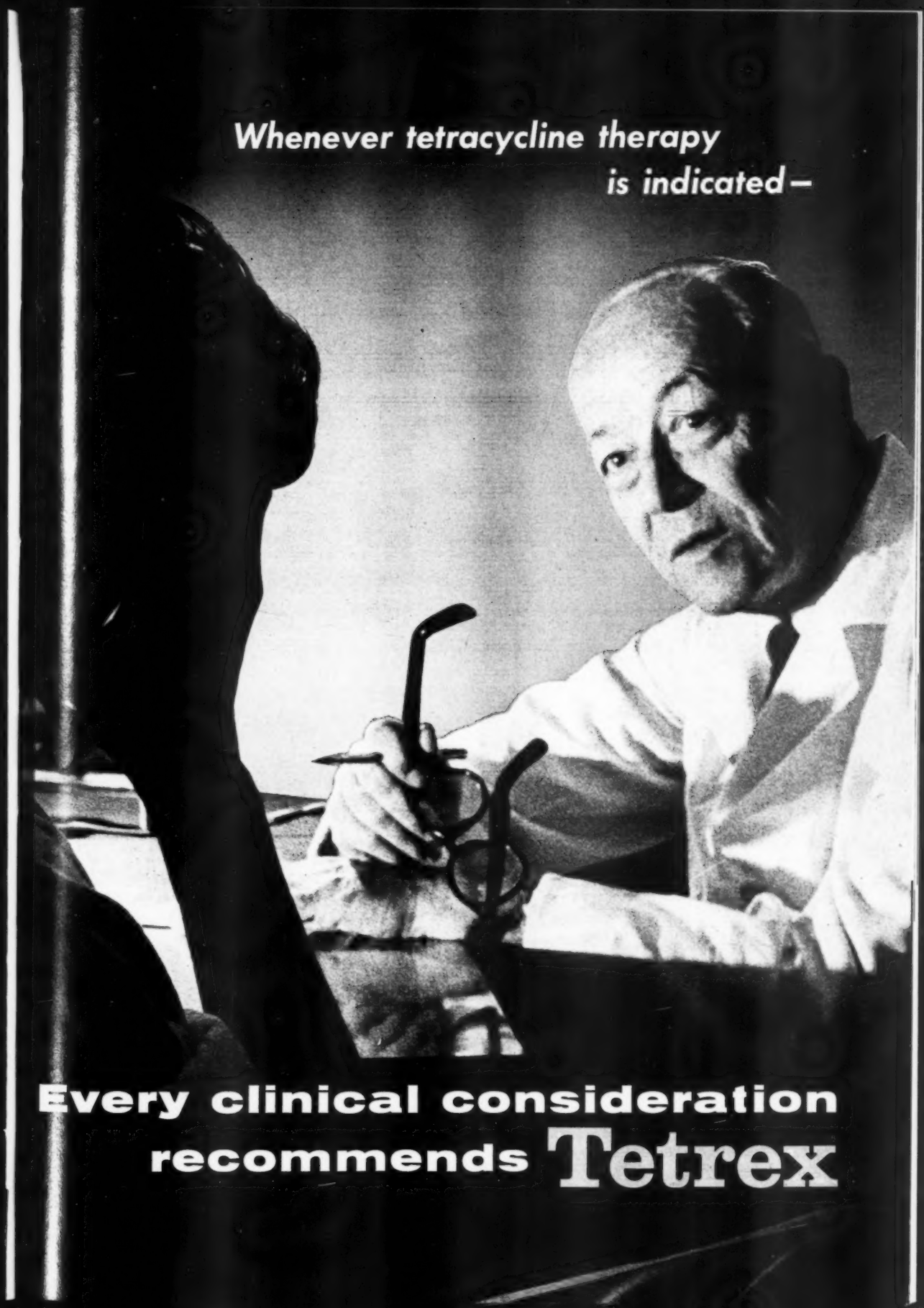
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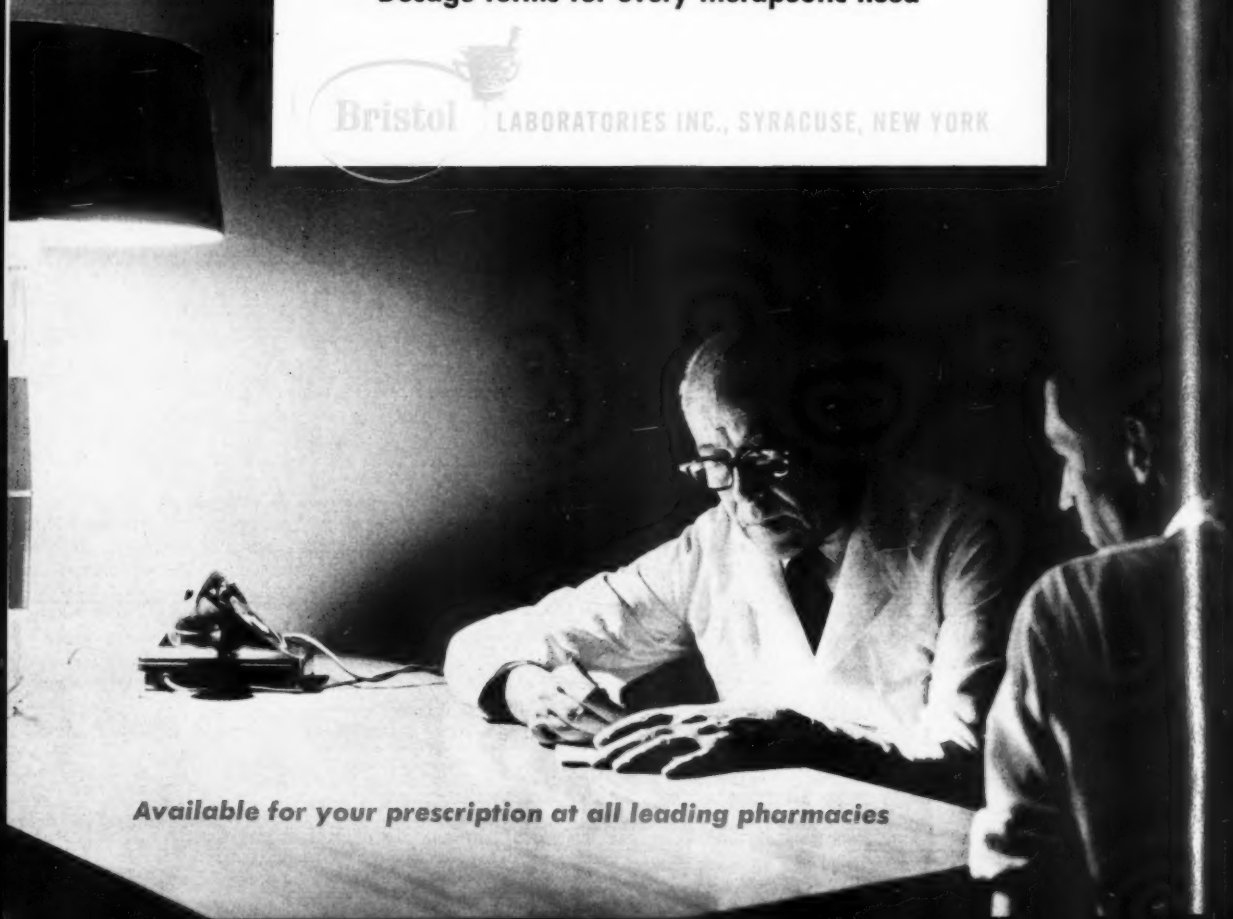

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ACHROMYCIN® Tetracycline	125 mg.
Phenacetin	120 mg.
Caffeine	30 mg.
Salicylamide	150 mg.
Chlorothen Citrate	25 mg.

Syrup

Each teaspoonful (5 cc.) contains:

ACHROMYCIN® Tetracycline equivalent to tetracycline HCl	125 mg.
Phenacetin	120 mg.
Salicylamide	150 mg.
Ascorbic Acid (C)	25 mg.
Pyrilamine Maleate	15 mg.
Methylparaben	4 mg.
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» unexcelled antihistaminic action

Diagnosis	No. of Patients	Response				Side Effects
		Excellent	Good	Fair	Negative	
Allergic rhinitis and vasomotor rhinitis	30	14	9	5	2	Slight Drowsiness (3)
Urticaria and angioneurotic edema	3	1	1	1		Dizzy (1)
Allergic dermatitis	2		1	1		Slight Drowsiness (2)
Bronchial asthma	1		1			
Pruritus	1		1			
Total	37	15	13	7	2	Drowsiness (5) Dizzy (1) 16.2%

From the preliminary **Dimetane Extentabs** studies of three investigators. Further clinical investigations will be reported as completed.

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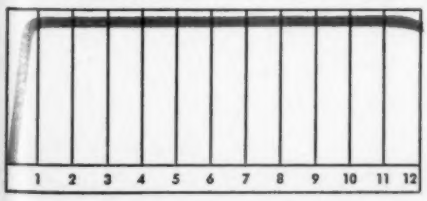
a blanket of allergic protection, covering 10-12 hours—with just one Dīmetane Extentab » *DIMETANE Extentabs protect patient for 10-12 hours on one tablet.*



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***Children 2-6**—½ tab. or one teaspoonful Elixir t.i.d.*

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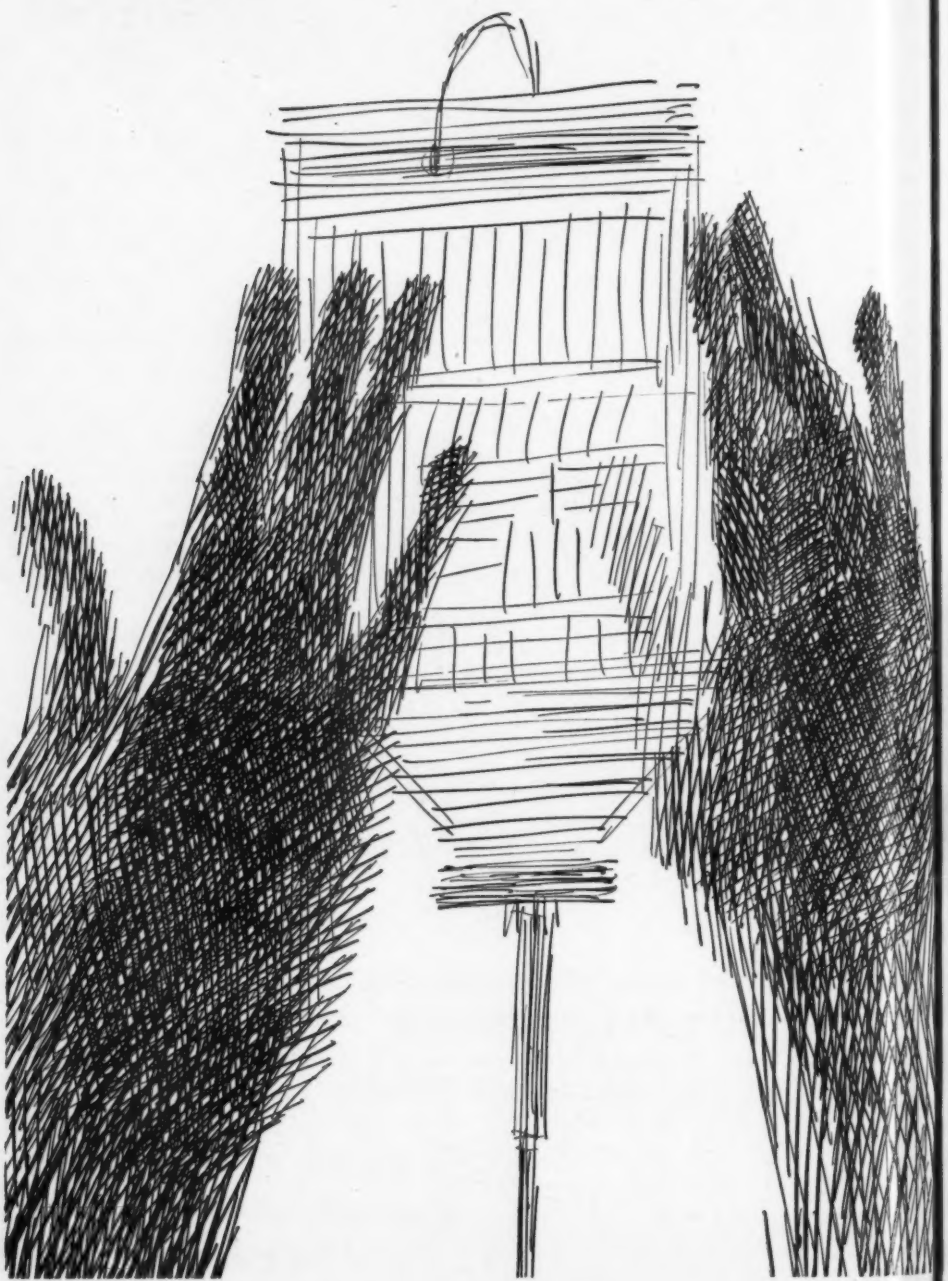

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A new, important antibiotic, SPONTIN, is now being made available—in limited supply—to the medical profession.

Discovered and developed by Abbott Laboratories, SPONTIN proved highly effective—even lifesaving—in clinical trials with *patients in whom other antibiotics had failed.*

Because of intricate and technical production problems, only a limited supply of SPONTIN is available currently. But, as soon as these problems are solved, SPONTIN will be offered to all hospitals.

For, essentially, SPONTIN is a drug for hospital use—for patients who are seriously ill, or even dying, from organisms that have become resistant to present-day therapy.

In its present form SPONTIN is administered intravenously, using the drip technique. The required dosage is dissolved in 5% Dextrose in water and administered in 35 to 40 minutes.

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1) *successful short-term therapy for acute or subacute endocarditis*

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3) *antimicrobial action against which resistance is rare—and extremely difficult to induce*

4) *bactericidal action at effective therapeutic dosages.*

SPONTIN comes as a sterile, lyophilized powder in vials representing 500 mg. of ristocetin A activity. While distribution is limited, your emergency needs will be handled by your Abbott representative, or at the nearest Abbott branch. Literature is available on request.

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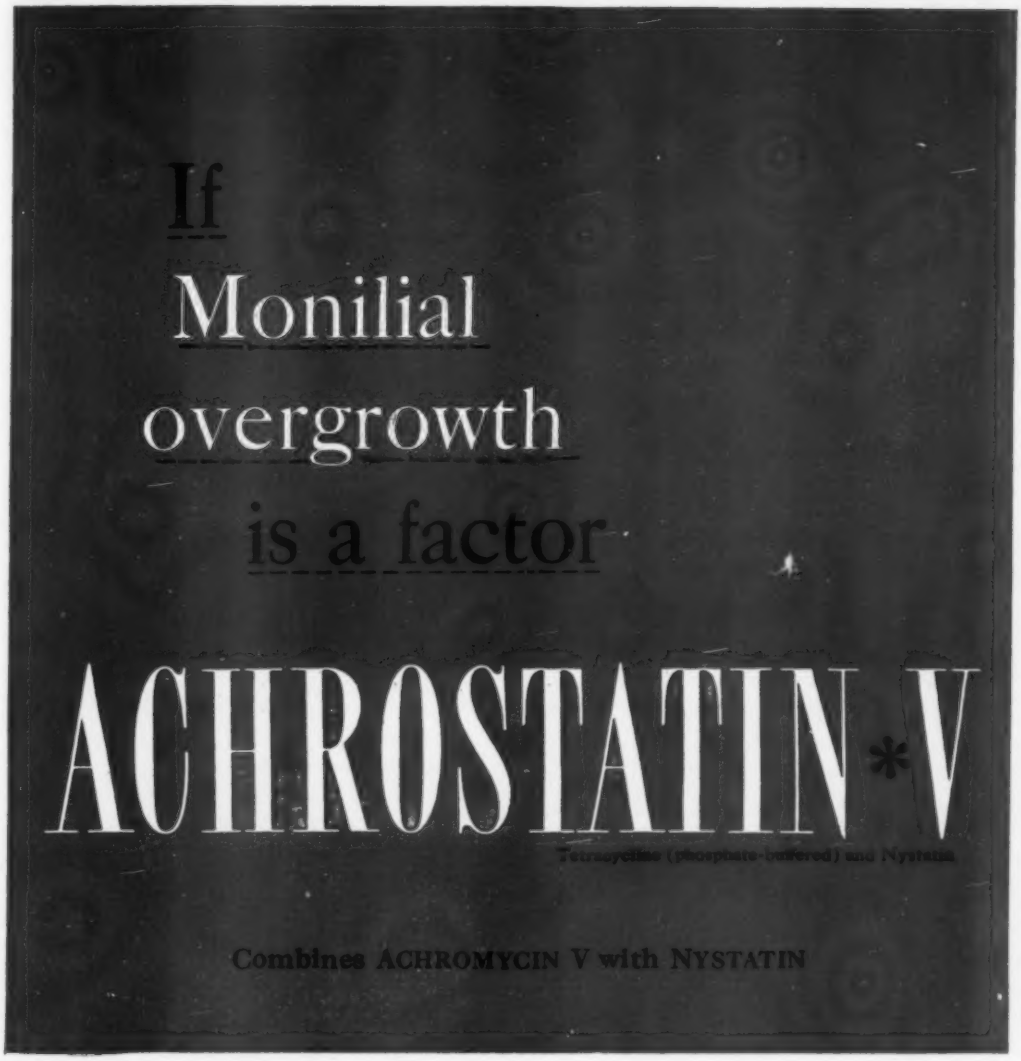

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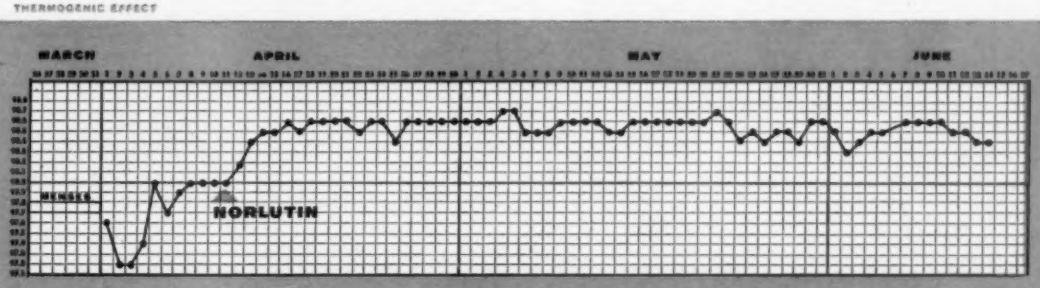

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*Greenblatt, R. B.: *J. Clin. Endocrinol.* 16:869, 1956.

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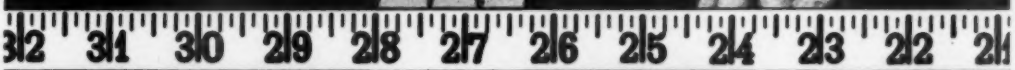

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References: (1) Gelvin, E. P., McGavack, T. H., and Konigsberg, S.: Am. J. Digest. Dis. 7:155, 1956. (2) Holt, J. O. S., Jr.: Dallas M. J. 42:497, 1956. (3) Natenshon, A. L.: Am. Pract. & Digest Treat. 7:1456, 1956. (4) Council on Pharmacy and Chemistry, New and Nonofficial Remedies: J.A.M.A. 163:356 (Feb. 2) 1957.

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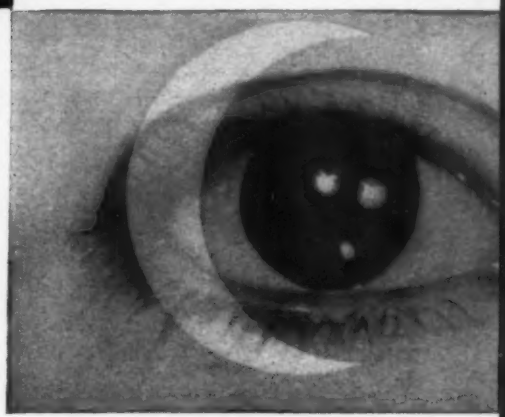

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1. King, J. H., Jr.; Passmore, J. W.; Skeehan, R. A., Jr., and Weimer, J. R.: Tr. Am. Acad. Ophth. *59*:759, 1955.
2. Kuhn, H. S.: Tr. Am. Acad. Ophth. *55*:431, 1951.

*T. M.

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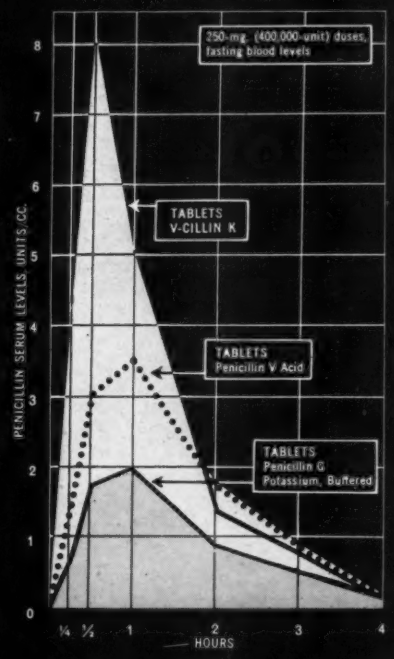

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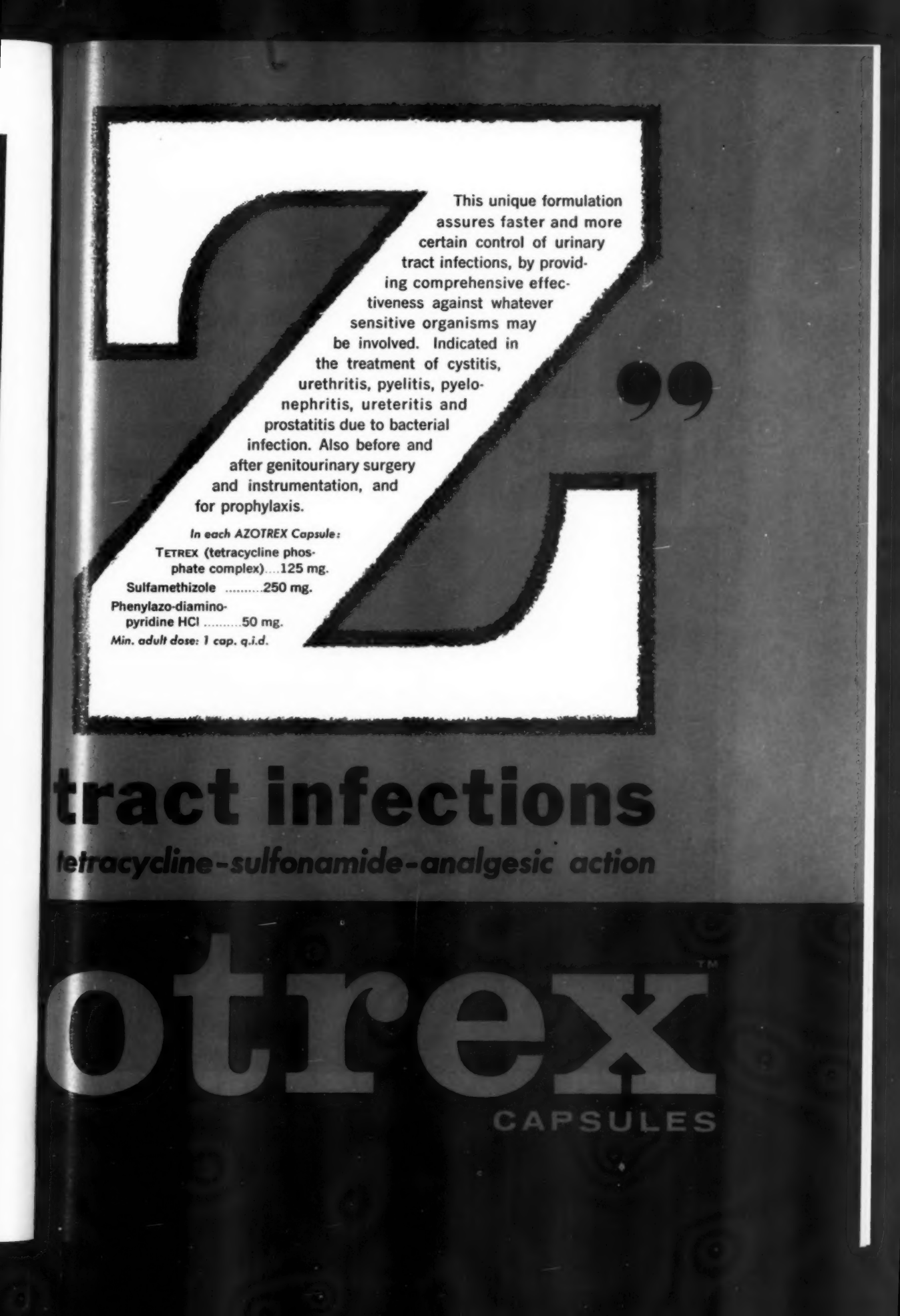
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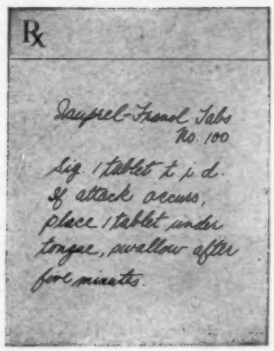
1. Fromer, J. L., and DeRisio, V. J.: *Lahey Clin. Bull.* 10:45, Oct.-Dec., 1956.



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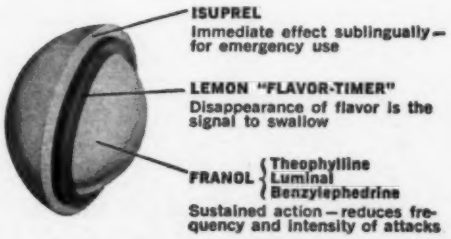

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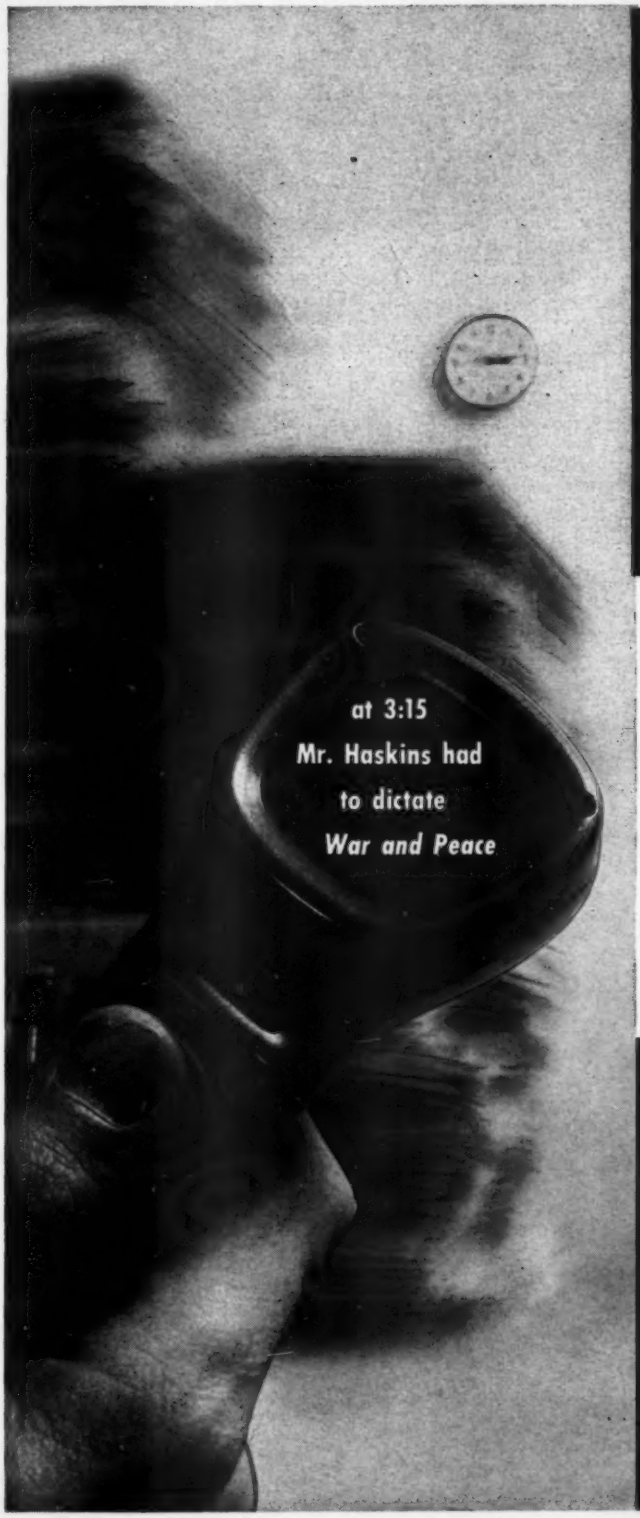

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1. Wilson, Travis: Comparative Effects of Various Rauwolfia Alkaloids in Hypertension, submitted for publication.

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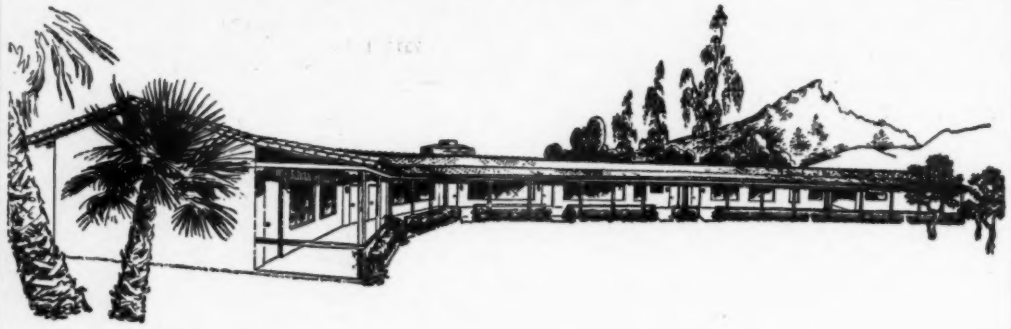

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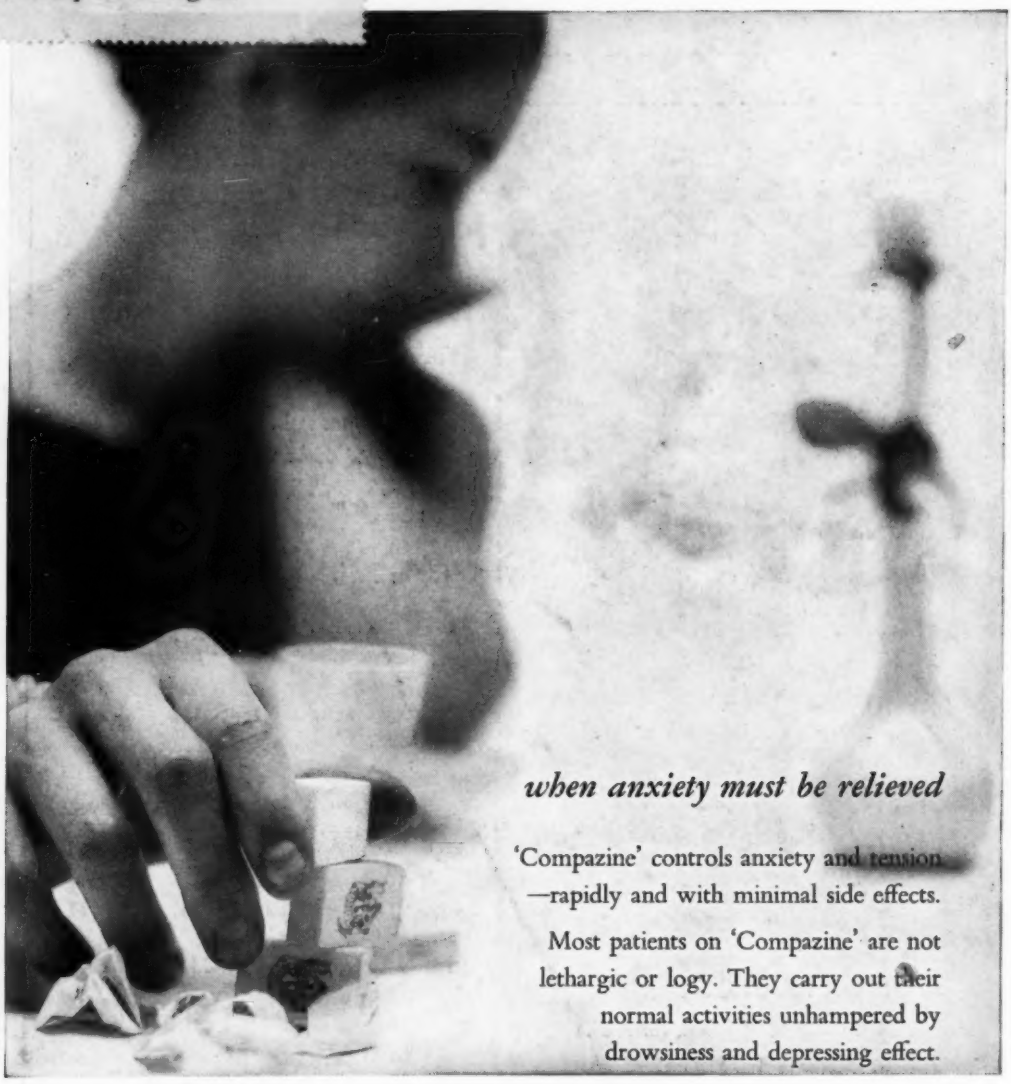

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